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The relationship between moving in early adolescence and adolescents' first employee-type jobs

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THE RELATIONSHIP BETWEEN MOVING IN EARLY ADOLESCENCE AND ADOLESCENTS' FIRST EMPLOYEE-TYPE JOBS

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CHAPTER I: THE RESEARCH PROBLEM

Statement of the Problem

A high rate of residential change is a characteristic of American life. In any given year, nearly one in seven families moves. Within a five year period, nearly one in two families moves (United States of America. Bureau of the Census., 2004).

At the same time, the use of social ties has long been recognized as a common and preferred means for individuals, including adolescents, to get jobs (Addison & Portugal, 2002; Blau & Robins, 1990; Brook, 2005; Granovetter, 1995; Holzer, 1987; Montgomery, 1991). Social ties have also long been recognized as important for the development of occupational awareness, occupational intention, and the acquisition of work-related skills (Helwig, 2004; Huang, Pergamit, & Shkolnik, 2001; Levine & Hoffner, 2006; Magnuson & Starr, 2000; McGee & Stockard, 1991).

In recent years, theorists of social capital have made more explicit how resources, including information about, access to, and control of jobs, are distributed across socio-demographic space. Theorists of social capital have observed four things about how resources are distributed across social networks: (a) resources tend to be localized socio-demographically (McPherson, Smith-Lovin, & Cook, 2001); (b) individuals embedded within varied social networks experience different resources and constraints; (c) individuals' relative positions within their social networks influence those experiences (Brook, 2005; Lin, 2001); and (d) social networks tend to be bounded geographically (Borgatti, 1998).

These observations lead to the predication that the adolescents who do relocate in any given year with their families to different communities, and who may in doing so

experience disruption to their social networks, may also experience changes in their resources and constraints as they seek their first employee-type jobs. Employee-type jobs are formal jobs in which individuals serve under the supervision of others, work set hours, fulfill specified tasks, and receive paychecks on a regular basis.

The relationship between residential change in early adolescence and first employee-type jobs may only be important, however, if the job start dates for mobile adolescents are much earlier or much later than, or if the job characteristics are different for mobile adolescents from, what those concerned judge desirable. Whether, how intensely, and in what capacities, adolescents ought to work has been debated in the United States of America since the 19th Century. Federal and state Fair Labor Practices Laws enacted since then are evidence of the broad consensus that has emerged on certain minimum standards: adolescents should not engage in employee-type employment before age 14; adolescents should not engage in employee-type employment before age 16 to such an extent that it interferes with compulsory education; and adolescents should not engage in hazardous employment before age 18. Beyond those minimal standards, however, considerable disagreement remains.

Mortimer (2003) summarized contemporary arguments for getting employee-type jobs during adolescence, apart from any real need, as: holding employee-type jobs during adolescence contribute to the movement of adolescents towards autonomy as adults; holding employee-type jobs during adolescence develop human capital needed for the adult work world; and holding employee-type jobs during adolescence develop social capital needed for the adult work world. Mortimer summarized contemporary arguments for not getting an employee-type job until after adolescence, apart from any real

individual or family need for money, as: working employee-type jobs in adolescence entail opportunity costs that override potential benefits; or working employee-type jobs in adolescence is harmful in-and-of itself. Within the latter argument falls concern regarding precocious behavior – behavior considered appropriate for adults but not adolescents.

Researchers have found a number of specific correlates of working employee-type jobs during adolescence. Specific positive correlates of working employee-type jobs during adolescence include: increased likelihood of being employed later (Kablaoui & Pautler, 1991; Tienda & Stier, 1996); increased wages in 20s and early 30s (Hotz, Xu, Tienda, & Ahituv, 1999; Light, 1999; Ruhm, 1997); higher occupational status, higher probability of receiving health and retirement benefits, and higher number of weeks worked later in life (Ruhm, 1997). Other positive life outcomes include: having completed college by 30, if hours worked during high school were moderate (Rothstein, 2001a). Specific negative correlates include: increased risk of injuries, including injuries that result in permanent disability or death (Landrigan & McCammon, 1997); decreased time for health-maintenance activities (Safron, Schulenberg, & Bachman, 2001); increased substance use (Bachman, Johnston, & O'malley, 1986; Bachman, Safron, Sy, & Schulenberg, 2003; Bachman & Schulenberg, 1993; Steinberg & Dornbusch, 1991), earlier and more frequent dating (Bachman & Schulenberg, 1993); early sexual intercourse (Bozick, 2006); poor academic performance (Bachman, Safron, Sy, & Schulenberg, 2003); increased interpersonal aggression (Bachman, Safron, Sy, & Schulenberg, 2003); and increased delinquency (Wright, Cullen, & Williams, 2002). The

direction of causality, however, has only been demonstrated for increased injuries, including death, and decreased health-maintenance activities.

As for the expectations of adolescents themselves, Feldman and Quatman (1988) found the mean age adolescents expected to take a regular part-time job to be 16.2 years old. Meanwhile, the mean age parents expected their teens to take a regular part-time job was 16.6. Examining parental expectations in a slightly different manner, Phillips and Sandstrom (1990) found that the majority of parents interviewed either agreed that present levels of adolescent job-holding were "about right" or that more adolescents should hold jobs. One in four parents, however, thought too many adolescents were holding jobs. One in five parents expressed no opinion, suggesting that the issue was not salient for them.

In summary, high residential change is characteristic of American life. At the same time, social ties contribute to developing occupational awareness and intention, acquiring the skills needed for occupations, and learning about actual job openings. Based on social capital theory, this study predicted that residential change leads to changes in the resources and constraints adolescents experience as they seek their first employee-type jobs. Researchers have found holding employee-type jobs during adolescence to be predictive of some aspects of young adult work experience or other later life outcomes. Consequently, identifying factors related to changes in first employee-type job holding is worthwhile. However, no studies were found during the literature review that examined the relationship between residential change and first employee-type jobs.

Purpose of the Study

This study had two related purposes. The first purpose was to explore the relationship between moving with one's family during early adolescence and the age at which adolescents acquired their first employee-type job. Background factors found by earlier researchers to be predictive of adolescent job holding were included as controls. These included: (a) gender, (b) race/ethnicity, (c) the ratio of household income to local poverty level, (d) region of country, and (e) whether the adolescent lived in a rural or urban area. The relationship was further examined utilizing characteristics of jobs found in the literature regarding adolescent and adult employee-type employment. These characteristics, as adapted for first jobs, included: (a) industry of the first employee-type job, (b) occupation of first employee-type job, (c) environment typology of occupation of first job, (d) prestige of occupation of first job, and (e) complexity, or difficulty of learning tasks, of occupation of first job.

If a relationship between mobility and any characteristic of getting one's first employee-type job were found, a second purpose of this study was to determine if the relationship involved moderator variables related to the three aspects of social capital theory described in the Theoretical Foundations section of this proposal: (a) resource connectedness through participation in social networks, (b) social support and (c) intergenerational closure. In the original proposal of this dissertation, this second line of inquiry was to be shaped by whether the relationship found pursuing the first purpose applied to the whole sample, or to particular demographic groups. This second line of inquiry was also to be shaped by whether the relationship involved interactions with other predictors. This study sought to describe the interactions between mobility and those

predictors. This purpose was limited, however, by the variables available in the archival data being used for the study. Ultimately, this purpose was not fulfilled. This study was carried out through a secondary analysis of data from the National Longitudinal Study of Youth, 1997 Cohort (NLSY97).

Background and Need for the Study

The need for the study was suggested by two sets of findings of previous researchers. First, residential change after age 14 has an impact on the job networks of adolescents. Second, residential change throughout childhood and adolescence impacts other adolescent outcomes.

At least one study has found that residential change has an impact on the job networks of adolescents. Studying racial differences in adolescent employment, Gardecki (2001) restricted her sample to adolescents 16 years or older, living with an identifiable parent or parent figure, who had remained in the same labor market from age 14. Gardecki reasoned that nonmoving adolescents might have more stable job networks (Gardecki gives the examples of family, friends and former employers). Consequently, they may be more likely to be employed at later ages. Further, Gardecki reasoned that movers may lack familiarity with their new areas, and the available employers within it, that hinders their ability to find work. Finally, Gardecki reasoned that movers may find it more difficult to obtain the references needed for most jobs. Gardecki attempted to discern how restricting her sample to non-movers might bias her results by tabulating the differences between moving and nonmoving adolescents. Gardecki found 61% of non-movers held jobs versus 44% of movers. Gardecki's sample, with the restrictions imposed, included 2,512 adolescents from survey years 1997 and 1998 of the NLSY97.

Gardecki did not consider, however, the residual effects of residential change before age 14, the age set by Federal law as the minimum for employee-type employment. Gardecki also did not consider how residential change may be related to the occupations or industries adolescents are employed, the prestige of the occupations, the environments adolescents found themselves working in, the complexity of those occupations, or any other aspects of that employment.

Findings that have been made of relationships between residential change and other adolescent outcomes reinforce the idea that adolescents who relocate may experience changes in their resources and constraints as they seek their first jobs. Educational outcomes found to be related to residential change include: academic performance, attainment and completion (Alexander, Entwisle, & Horsey, 1997; Astone & McLanahan, 1994; Coleman, 1988b; Entwisle, Alexander, Olson, & Ross, 1999; Hagan, MacMillan, & Wheaton, 1996; Haveman, Wolfe, & Spaulding, 1991; Hofferth, Boisjoly, & Duncan, 1998; Long, 1975; McLanahan & Sandefur, 1994; Pribesh & Downey, 1999; Rumberger & Larson, 1998; Swanson & Schneider, 1999; Teachman, Paasch, & Carver, 1996). Behavioral outcomes found to be related to residential change include: delinquency, crime and violence (A. C. Brown & Orthner, 1990; Meadows, 2007; Norford & Medway, 2002; Silver & Miller, 2004; South, Haynie, & Bose, 2005; Sun, Triplett, & Gainey, 2004); use of controlled substances (Hoffman & Johnson, 1998), and sexual behavior and reproduction (Baumer & South, 1998). Social outcomes in adulthood found to be related to residential change include: family structure and social integration (Myers, 2000). Mental health related outcomes included: depression and perceived mastery over environment (Hendershott, 1989; Meadows, 2007).

Previous researchers have also identified residential change as a potential contributing factor for a number of other factors predictive of adolescent outcomes. Paik and Phillips (2002) wrote: "[adolescent residential] mobility, although not a new concept, is gaining momentum as a contributing factor to the [academic achievement gaps] historically attributed to race, ethnicity, gender, and social/economic status"(p. 4). Astone and McLanahan (1994) considered residential change as a potential mechanism to explain the long recognized relationship between living in a non-intact family and dropping out of school. Astone and McLanahan found a difference of 28%, significant at the .05 level, attributable to residential change, between children living in stepfamilies and children living in intact families. Tucker, Marx, and Long (1998) found that residential change compounded the educational disadvantage of living in any family structure other than a two-biological parent. Ainsworth (2002) determined that residential change accounts for 18% of educational disadvantage associated with living in a single parent family and 29% of disadvantage associated with living in a stepfamily.

Theoretical Foundations

As noted earlier, certain aspects of social capital theory suggest that adolescents who have recently moved might experience changes in employment-related resources and constraints. This section defines social capital theory and further describes how participation in social networks results in finding jobs. This section describes the possible relationships that may exist between three particular aspects of social capital and adolescent employee-type jobs in particular: (a) resource connectedness through participation in social networks, (b) social support and (c) social closure.

Social Capital Theory

Social capital theory is concerned with the resources available to individuals through social networks. Social capital theory assumes the structural aspects of how individuals and groups are connected to one another described by social network theory (Lin, 2001; Scott, 1991). In social network theory, the attributes of individuals are less important than the individuals' relative positions within social networks, and the overall horizons of the networks in which the individuals are embedded (Blau, 1982; Hanneman & Riddle, 2005; Wasserman & Faust, 1994; Wellman, 1982). Individuals on the periphery of networks are less likely to receive complete or timely information, or to be fully able to leverage the resources of the network. At the same time, small tightly connected networks may have smaller horizons of resources than networks with many loose connections (Granovetter, 1995). Thus, individuals in small, tightly connected, networks may have access to fewer resources than individuals within networks with many loose connections. Adolescents who have recently moved have been found to have smaller, more dense, social networks (South & Haynie, 2004).

Social Networks and Jobs

In social capital theory, information about, or access to, jobs is one kind of resource available through social networks (Brook, 2005; Gardecki, 2001; Glaeser, Laibson, Scheinkman, & Soutter, 1999; Granovetter, 1995; Holzer, 1987). Information about jobs is frequently acquired through relationships formed for other purposes such as religious activity, participation in cultural, leisure or social groups, school, neighborhood contact or volunteering (Brook, 2005; Granovetter, 1995). Different kinds of relationships provide different kinds of resources (Burt, 2000). Information exchange

regarding employment often occurs through informal chit chat or routine exchanges without actively seeking such information (Brook, 2005; Granovetter, 1995). This process favors those whose networks are resource rich to begin with (Lin, 2000). Information regarding jobs typically travels through short chains of people, less than two linkages (Burt, 2000; Granovetter, 1995).

Social Support

According to social capital theory, some measure of social support is necessary for individuals to benefit from the resources available through others. At a minimum, there must be "mutual acquaintance and recognition" (Bourdieu, 1986, p. 248) and some "expected returns" (Lin, 2001, p. 19). Coleman identified "trustworthiness" and "extent of obligations [to one another]" as necessary (1988b, p. 102). Flap and Volkner identified "willingness to lend support" (2001, p. 300) as important. Adolescents who have recently moved may enjoy less social support because they are not acquainted with, or recognized by, many people in their new location. Adolescents who have recently moved may be enjoy less social support because they have insufficient experience with others for others to develop expectations of the adolescents' behavior. In school settings, in particular, teachers may be less likely to invest in adolescents they don't know well, particularly if academic records show that adolescents' have moved often (Astone & McLanahan, 1994; McLanahan & Sandefur, 1994).

Intergenerational Closure

Intergenerational closure may be necessary for adolescents to have the values that lead to work or, alternatively, refrain from working to pursue other activities such as schooling. "Intergenerational closure" (Coleman, 1988b, p. 107) is a social network

structure in which parents know their children's friends, and perhaps more importantly, the parents of their children's friends. Intergenerational closure also involves parents knowing who is with their children. Finally, intergenerational closure involves parents knowing the teachers and school activities of their children. Coleman proposed this concept, and argued for its importance, after developing the more generalized concept of "closure" (Coleman, 1988b, p. 106). Assuming no individual has sufficient power alone to control another, Coleman observed that two individuals, regardless of age or relationship to each other or to a third individual to which they are both linked, can impose effective norms and sanctions on the third individual only if they are also linked to one another, thereby being capable of collective action. Closure in social networks occurs when these kinds of triangular linkages are made, such that any two individuals within the triad do have power over the third. Coleman's concept is congruent with the much older social control theory proposed by Shaw and McKay, recently revised by Sampson and Groves (Sampson & Groves, 1989; Sun, Triplett, & Gainey, 2004; Wright & Cullen, 2004).

Returning to the concept of Coleman's concept of intergenerational closure and its relationship to first employee-type jobs, Coleman argued that peer networks will likely determine norms and sanctions absent linkages between parents and the parents of children's friends, and parents and children's teachers. This is because there is a high degree of closure between children within schools and neighborhoods (Coleman, 1988b). Applying this to first employee-type job holding, it is reasonable to surmise that while parents and teachers may have expectations regarding when adolescents enter the world of work, or what kinds of jobs adolescents take, or alternatively, that adolescents forgo

early job holding to concentrate on other activities such as school, residential change may impact the ability of parents and teachers to establish those expectations as effective norms and sanctions. During the literature search, however, no studies were found that addressed this. One study was found in the literature, however, that had found intergenerational closure correlated with the educational outcomes of mathematical achievement and dropping out (Carbonaro, 1998).

Summary

Information about, or access to, jobs is one kind of resource potentially available through social networks. Residential change disrupts social networks, at least in the short term, as interpersonal connections in areas of origin are severed when individuals move away. Following moves, adolescents may find themselves embedded in smaller networks. Following moves, adolescents may find themselves attached to the periphery of networks. Following moves, adolescents may experience less social support or social closure within their social networks. All of these factors may contribute to adolescents who have moved having different first employee-type job experiences than non-movers. However, no studies were found during the literature review that addressed whether residential change influences first employee-type employment experiences.

Research Questions

The primary purpose of this study led to six questions, each involving a characteristic of first employee-type jobs derived from the literature on adolescent and adult employee-type employment. An additional question arose from controlling for background factors found by previous researchers to be predictive of adolescent employment or other adolescent outcomes. The secondary purpose of this study led to

three questions. Being dependent on the findings of the first seven questions, questions eight through ten were ultimately not pursued.

Question 1

What was the relationship between moving early in adolescence and the age at which adolescents started their first employee-type jobs?

Question 2

What was the relationship between moving early in adolescence and the industries in which adolescents first found employee-type jobs?

Question 3

What was the relationship between moving early in adolescence and the occupations in which adolescents first found employee-type jobs?

Question 4

What was the relationship between moving early in adolescence and the prestige of the occupations in which adolescents first found employee-type jobs?

Question 5

What was the relationship between moving early in adolescence and the environment typology of the occupations in which adolescents first found employee-type jobs?

Question 6

What was the relationship between moving early in adolescence and the complexity of, or difficulty of learning, the occupations adolescents get for their first jobs?

Question 7

What interactions occurred between moving early in adolescence and the background variables included in the analyses of other questions? As noted earlier, these included: (a) gender, (b) race/ethnicity, (c) the ratio of household income to local poverty level, (d) region of country, and (e) whether the adolescent lived in a rural or urban area.

Question 8

What moderator variables related to social network participation could be identified as contributing to the relationship between mobility and first employee-type employment of adolescents?

Question 9

What moderator variables related to social support could be identified as contributing to the relationship between mobility and first employee-type employment of adolescents?

Question 10

What moderator variables related to intergenerational closure could be identified as contributing to the relationship between mobility and first employee-type employment of adolescents?

Definitions and Terms

Complexity of Occupation

The difficulty, on average, of first learning the tasks of an occupation. Holland (1996) proposed this dimension of work environments. This study used a table found in the Dictionary of Holland Occupational Codes, 3rd Edition (Gottfredson & Holland,

1996) to match the 1990 Census Occupation Codes reported in the NLSY97 to the scale Holland developed to measure complexity. The scale ranges from 0 to 100.

Early Adolescence

Adolescence is the period of transition from childhood to adulthood. For the purposes of this study, early adolescence was defined as the age between 12th birth date and 14th birth date.

Employee-Type Jobs

One of three types of jobs distinguished by the NLSY97, the other two being freelance or self-employed jobs. An employee-type job is one in which an individual has an on-going relationship with a particular employer. The characteristics that distinguish employee-type jobs from informal or self-employed jobs include formal contracts setting the wages, conditions, and duties of employees; periodic pay, usually weekly, bi-weekly or monthly; and direct supervision by another. Additionally, the Fair Labor Standards Act prohibits employee-type employment of adolescents before age 14, and limits the hours and types of work adolescents may perform through age 16. Consequently, the NLSY97 assumes that any work reported by adolescents prior to age 14 is not in employee-type jobs (Center for Human Resource Research, 2003; 2006).

Environment Typology (Holland Codes, RIASEC)

A set of six model environments based upon a theory of persons and work environments developed by Holland (1959; 1966b; 1973; 1985; 1997). These correspond to six personality types of the same name: realistic, investigative, artistic, social, enterprising, and conventional. In practice, work environments and personalities are thought to be blends of these ideals and are described by codes that identify the ideal the

personality or environment most resembles first, followed by the ideal that the personality or environment resembles second most, followed by the ideal that the personality or environment resembles third most strongly. This study used a table found in the Dictionary of Holland Occupational Codes, 3rd Edition (Gottfredson & Holland, 1996) to match the 1990 Census Occupation Codes reported in the NLSY97 for the jobs held by adolescents to Holland's environment typology.

Freelance-Type Job

One of three types of jobs distinguished by the NLSY97. A freelance-type job was one in which an individual did not have an on-going relationship with a particular employer. Additionally, in the NLSY97, all jobs reported by 12 and 13 year olds were considered freelance-type jobs since The Fair Labor Standards Act prohibits employment of adolescents younger than 14. Finally, adolescents who were 16 years or older and who earned more than $200.00 per week performing freelance-type jobs were considered self-employed (Center for Human Resource Research, 2003; 2006).

Industry

A grouping of entities that share a common method of generating revenue through the creation or provision of similar goods or services. These may be for-profit businesses, non-profit organizations, or governmental bodies. This study, following the NLSY97, used the 2002 Industrial Classification System of the Census Bureau to define industries. These are numeric 4-digit codes, with descriptive names, derived from the 2002 North American Industry Classification System (Center for Human Resource Research, 2006; United States of America. Bureau of the Census., 2002).

Intergenerational Closure

A social network structure in which parents know their children's friends, and the parents of their children's friends. Intergenerational closure also involves parents knowing who is with their children. Finally, intergenerational closure involves parents knowing the teachers and school activities of their children (Coleman, 1988b).

National Longitudinal Survey of Youth 1997 (NLSY97)

The National Longitudinal Surveys of Youth (NLSY) are a set of surveys designed to gather information at multiple points in time on job-holding and other significant life activities of several groups of men and women. The surveys are conducted by the Bureau of Labor Statistics. The NLSY97 is the most recent cohort in the NLSY series (Center for Human Resource Research, 2006). The NLSY97 was the data source for this study.

Occupation

A set of activities or tasks that employees are paid to perform. Any given occupation may be concentrated in one or a few particular industries, or found in many industries. This study, following the NLSY97, used the 2002 Occupational Classification System developed by the United States Census Bureau to define occupations. These are 4-digit numeric codes derived from the 2000 Standard Occupational Classification system (SOC) (Center for Human Resource Research, 2006; United States. Office of Federal Statistical Policy and Standards., 2000).

Occupational Prestige

The social status ascribed on average by people to jobs or occupations. This study utilized a ranking of occupations computed by Nakao and Treas (Nakao, Hodge, &

Treas, 1990; Nakao & Treas, 1990) to determine the prestige levels of jobs first held by adolescents. This ranking was scaled from 0 to 100.

Residential Change

Any change in address, even if the change is local.

Self-Employed Type Job

One of three types of jobs distinguished by the NLSY97. Adolescents who were 16 or older at time of interview and earned more than $200.00 per week through freelance-type jobs were considered self-employed (Center for Human Resource Research, 2003; 2006).

Social Support

In a general sense, social support is the physical and emotional comfort given to individuals by their families, friends, classmates, teachers or others.

Limitations

Five issues may limit the degree to which the results of this study may be generalized. These include: (a) the initial samples drawn, (b) the longitudinal nature of the study, (c) the use of multiple instruments within the NLSY97 for data collection, (d) the relative rarity of particular occupations, industries or environment typologies within the data, and (e) limitations inherent in utilizing self-reporting processes to collect some of the data. It is also important to remember that this study, lacking as it does the characteristics of an experiment, may have established correlations but could not demonstrate causality. Finally, it is important to observe that, as a secondary analysis, this study was limited by the information present in the pre-existing dataset.

Using as it did, the NLSY97, this secondary analysis should be broadly generalizable within the United States of America but not beyond. The cross-sectional sample of the NLSY97 was designed to be representative of young people living in the United States during 1997 and born January 1, 1980 through December 31, 1984. However, not every question of interest was asked every survey year. This limited the sample actually used for this secondary analysis to adolescents born in 1984. As labor conditions affecting adolescents may vary from year-to-year, this secondary analysis may be less representative of other years as a consequence. Moreover, the data set utilized did not contain information regarding local economic or labor market conditions. Consequently, these factors could not be controlled for. The data collection strategies of the NLSY97 included an oversample of Blacks and Hispanics. Thus, this secondary analysis should represent well those subsets of the population. However, all non-Black or non-Hispanic adolescents were aggregated together by the NLSY97. Consequently, no conclusions specific to any other specific sub group could be drawn in this secondary analysis.

The longitudinal nature of the study limited the study in two ways: through attrition before the end of the study (19^{th} birth date), and through the end of the study before all participants were observed to start working. By the end of the study frame, 1512 subjects (90.27%) had been observed to start their first employee-type job. However, 65 subjects (3.89%) left the study before the end of the study without having been observed to start their first employee-type job. Additionally, 108 subjects (6.45%) who remained in the study through the end of the study frame were not observed to start their first employee-type jobs within the study frame.

The relative rarity of any particular industry, occupation or environment typology among the observed jobs limited the study in three ways. First, the relative rarity of any particular industry, occupation or environment typology limited which particular industries, occupations or environment typologies could be examined. Second, the relative rarity of any particular industry, occupation or environment typology limited the number of parameters that could be included in the models. This had a particularly damaging impact on the ability of this study to examine directly the mediating roles that the three aspects of social capital emphasized in the theoretical section of this study – the size and structure of social networks, intergenerational closure, and social support – were hypothesized to play in the relationship between residential change in early adolescence and the characteristics of first employee-type jobs. Third, the relative rarity of any particular industry, occupation or environment typology likely reduced the power of those tests which involved the response variables with lowest numbers of observed jobs (Concato, Peduzzi, Holford, & Feinstein, 1995).

The reliance on self-reporting during the collection of the NLSY97 data introduced three vulnerabilities. First, the data were vulnerable to the possibility that adolescents did not answer questions truthfully. Second, the data were vulnerable to the possibility that adolescents did not understand the intent of the questions. Third, the data were vulnerable to the possibility that adolescents did not answer questions consistently (Sudman & Bradburn, 1974; Tourangeau, Rips, & Rasinski, 2000).

A final limitation of this study was that the data for the NLSY97 were not collected with the research questions of this particular study in mind. Consequently, full information was not available in the dataset to create all desired predictors or response

variables, nor structure predictors or response variables as precisely as desired. This limitation is common to secondary analyses (Boruch, 1978; Jacob, 1984; Kiecolt & Nathan, 1985). This final limitation contributed to the inability of this study to examine directly the mediating roles that the three aspects of social capital emphasized in the theoretical section of this study – the size and structure of social networks, intergenerational closure, and social support – were hypothesized to play in the relationship between residential change in early adolescence and the characteristics of first employee-type jobs.

Significance of the Study

This study is significant because it extends the literature on the relationship between adolescent residential change and adolescent or later life outcomes to include the relationship between adolescent residential change and the age at which adolescents acquire their first jobs. This study is also significant because it extends the literature on the relationship between adolescent residential change and adolescent or later life outcomes to include the relationship between adolescent residential change and five characteristics of adolescents' first jobs: occupation, industry, prestige of occupation, Holland's environment typology of occupation, and complexity of first occupation.

This study is significant because it describes the distribution of Holland's environment typology (RIASEC Codes) and complexity scale (Gottfredson & Holland, 1996) across adolescents' first employee-type jobs. This is in addition to the extension of the literature which came from examination of the central questions. No studies were found in the literature that had previously done that. Moreover, no studies were found in the literature which had described Holland's environment typology or complexity scale

more generally across any jobs held by adolescents. Holland's environment typology and/or corresponding personality typology, and complexity scales, however, are prominent in both adolescent (Osborn & Baggerly, 2004) and adult career counseling (Reardon, Bullock, & Meyer, 2007). Holland's environment typology, and/or corresponding personality typology, has also been applied to fields of study such as student success in college (K. A. Feldman, Smart, & Ethington, 1999), client/counselor interactions and counseling outcomes (Bruch, 1978; Miller, Springer, & Cowger, 2004), and marital satisfaction (Bruch & Skovholt, 1985).

This study is significant because it applies the concept of occupational prestige, using Nakao and Treas' 1989 computation of occupational prestige scores, to adolescents' first jobs. No studies were found in the literature which had previously described first employee-type jobs in terms of prestige.

CHAPTER II: REVIEW OF RELATED LITERATURE

Overview

The literature review will focus on three major areas: (a) family and adolescent residential change including who moves and why people move; (b) the relationships between residential change and adolescent outcomes other than employment; and (c) adolescent jobs, including who works, the occupations and industries adolescent are employed in, the characteristics of those occupations and industries, and the job search methods and relationships adolescent utilize to find work.

Family and Adolescent Residential change

The family and adolescent residential change component of the literature review discusses general characteristics of families with adolescents who make residential moves including 'who moves' and 'why people move'.

Who Moves

Schachter (2001b) conducted a descriptive study of who changed residences primarily using the March 2000 Current Population Survey (CPS) though he also utilized data from the March 1998 CPS and the March 1999 CPS. The CPS is a monthly survey of about 50,000 households, selected through a multistage stratified sampling scheme. The sample represents the civilian non-institutionalized population of the United States plus military personnel living off base or military personnel living on base with families.

Regarding the age range of adolescents of concern within this study, Schachter found that 15.3% of adolescents 10 to 19 years old moved during the year studied. Concerning the movement of this age group by race, White non-Hispanics had the lowest total rate, 13.5%. Hispanics, of any race, had the highest rate, 19.9%. Blacks followed

with 18.5%. Asians and Pacific Islanders had a residential change rate during the year studied of 16.9%.

Schachter did not break out the intersections of the age range of concern within this study with other characteristics such as family income, housing tenure of families -- owners versus renters, education level of parents, or household types -- married couples versus other family structures. However, overall, lower income families were more likely to move than higher income families: 21% for those earning less than $25,000.00 versus 12% for those earning more than $100,000.00. Lower income people moved locally more often than higher income people. Concerning housing tenure, more persons living in renter-occupied housing units, 32.5%, moved within the year covered by the study than persons living in owner occupied housing units, 9.1%. Status as homeowner or renter is closely related to age, race and ethnicity, and income. Owner-occupiers are older, White, not Hispanic, and more affluent than renters are. Concerning marital status, Schachter found that among those age 16 years or older, 22.9% of never married had moved followed by 20.5 of divorced or separated. In contrast, 12.0% of married moved while 6.9% of widowed moved.

Why People Move

In a separate study from the one just mentioned but using the same data sources, Schachter (2001a) also examined why people move. Schachter assigned to adolescents the reasons given for parents in the home. Between March 1997 and March 1998, a time period that overlaps survey years 1997 and 1998 of the NLSY97, 46.4% of those who moved did so for housing related reason, most often to get a new or better house or apartment. Additionally, 27.0% of those who moved did so for family reasons, including

divorce, remarriage and other family changes. Finally, 17.1% of those who moved did so for work related reasons, most often because of a new job or job transfer. Long distance moves, inter-county or interstate, are more likely to be made for work-related reasons while short distance moves are more likely to be made for housing-related moves. Those who were highly educated are more likely to move for work related reasons, especially for long distance moves. Lower income groups were less likely to move for work related reasons than higher income groups.

South, Crowder and South (1998) using data from the Panel Study of Income Dynamics, a nationally representative longitudinal survey, specifically studied the residential changes that occur as the consequence of changes in family structures. South, Crowder and South found that parental divorce sharply increased the annual probability that children would move out of their neighborhoods. Moreover, children of divorce tended to move to significantly poorer neighborhoods than children in stable, two-parent families. This difference was attributable to change in family income. Blacks were affected most. Children whose parents owned their own homes prior to divorce were also often affected. This was due to the need to sell the home during division of property. Remarriage was also associated with residential change. However, since remarriage was most likely for younger people, this residential change was likely attributable to the higher residential change rate of younger people.

Summary of Adolescent and Family Residential change

Schachter's studies suggest that any findings of changed relationships for the first employee-type jobs of adolescents who move may co-vary by the age of parents, race, ethnicity, household income, status of parents as renters or homeowners, marital status of

parents, or education status of parents. This may be particularly true if consideration is taken of relative distances of moves. If within-county moves disrupt social networks less than inter-county or inter-state moves, Blacks and Hispanics may experience less severe social network disruptions each time they move since they tend to move within counties. However, this is ambiguous since Hispanics, Asians and Pacific Islanders, followed closely by Blacks, move more often than Whites. If number of moves is related to first employee-type jobs, Hispanics, Asians, Pacific Islanders and Blacks may show more severe cumulative effects. These studies also provide reasons to think that the relationship between residential change and early job holding by adolescents may not be negative for all adolescents. Many young movers are moving because their parents are seeking better jobs or better housing. These reasons may place adolescents in environments with better resources, including connections to jobs, although this has not been studied.

Residential change and Adolescent Outcomes Other Than Employment

This section explores in more depth relationships that have been found between residential change and important outcomes, other than employment, for adolescents. These were referred to in the Statement of the Problem section. This section discusses the studies in more detail, focusing especially on the specific ways through which authors have suggested residential change affects adolescent outcomes.

Educational Outcomes

An early study of the relationship between residential change and educational outcomes was done by Long (1975). Long tested the hypothesis that the greater the number of states that a school-age child had lived in, the greater the likelihood of being

enrolled below the modal grade level. Long developed, then cross tabulated, a measure of relative progress in school with a measure of the frequency of interstate migration. Long utilized data from the 1970 Census of Population. Long found evidence that seemed at first to contradict the hypothesis. For the three age groups for which comparisons were made, 8 to 11, 12 to 15 and 16 to 17 years old, school-age children who had lived in three or more states, were less likely to be enrolled below the modal grade level. However, when Long took into consideration who was most likely to make interstate moves, children with well-educated parents, a different pattern emerged. For children whose fathers had dropped out of high school, children whose fathers had completed high school but gone no farther, and for children whose fathers had completed one to three years of college, the greater the number of states children had lived in the greater the likelihood of being below the modal grade in school. Children whose fathers had Bachelors' degrees, on the other hand, were less likely to be below the modal grade in school the greater the number of states they had lived in. Long theorized that interstate residential change placed demands on all children to adjust to new teachers, schools and curricula. Moreover, regardless of how they had performed in the past, all children who had moved would likely be asked to make up at least some missed material even as other material, acquired in previous schooling, was not recognized. Finally, all children moving to a new school and a new area of the country would be challenged to adjust socially, with possible consequent impacts on academic performance if the adjustment did not go well. The children of fathers who had Bachelors' degrees, however, may be better prepared to meet these demands because their parents were more accustomed to interstate residential change: likely having moved interstate as children or young adults

themselves; and likely having social networks dominated by other mobile college graduates as opposed to less mobile immediate kin.

Coleman (1988a) included residential change as a predictor of dropping out of school in a weighted logistic model using a sample of 4,000 adolescent drawn from the High School and Beyond dataset. Coleman attributed the statistically significant relationship he found to the loss of intergenerational closure in social networks. Coleman had found that the parents and caregivers of children within recently mobile families did not know the parents and caregivers within their new neighborhoods. Consequently, Coleman theorized, there was a loss of effective norms and sanctions.

Haveman, Wolfe and Spaulding (1991) also considered residential change as a predictor of dropping out, defining residential change in terms of total number of moves. Haveman, Wolfe and Spaulding drew their sample from Wave 20 of the University of Michigan's Panel Study of Income Dynamics, selecting individuals who were aged four years or younger in 1968, the first year of the panel survey, and who were still in the survey sample in 1987. In 1987, these adolescent were 19 to 23 years of age. Total sample size was 1,258 individuals. When entered singly into a probit regression, number of location moves was found predictive of dropping out, -.14, significant at the .05 level; number of location moves remained predictive, -.13, significant at the .05 level, in the full model. Haveman, Wolfe and Spaulding attributed the effect of changes in residence to residential change being stressors for children within the family context.

Astone and McLanahan (1994) considered residential change as a potential mechanism to explain the long recognized relationship between living in a non-intact family and dropping out of school. Astone and McLanahan's sample was drawn from the

High School and Beyond data set. It included adolescents who were sophomores in 1980 and participated in all four waves of data collection who were White, Black, Mexican, or Puerto Rican, and for whom data on the response variable were not missing. 10,434 adolescent in total were included in the sample. The sample is intended to be nationally representative of adolescents in that time period. Astone and McLanahan found a difference of 28%, significant at the .05 level, attributable to residential change, between children living in stepfamilies and children living in intact families. Astone and McLanahan surmised that residential change might have several effects: (a) children who often change schools may miss key educational material, a loss of human capital; (b) children and parents who are new to a school may have less information about the school system, a social capital effect; (c) teachers may be less likely to invest time and energy in a child they do not know well, a social capital effect; and (d) children who are attending a new school may feel socially marginalized and, as a consequence, associate with other marginalized adolescents, also a social capital effect.

Hagan, MacMillan and Wheaton (1996) examined the roll that parental involvement plays in mitigating the potentially negative affects of residential change. Hagan, MacMillan and Wheaton defined residential change as cross-county or cross-province moves within Canada. Hagan, MacMillan and Wheaton's sample was 492 adolescents in a suburb of Toronto, all of whom were employed at the time of the interviews. These adolescents were part of a larger longitudinal study begun in the city in 1976. The original sample was 834 individuals. Hagan, MacMillan and Wheaton found that those who had moved were less likely to complete high school or college and more likely to have lower levels of educational attainment and occupational status ($p<.01$, one

tailed tests). Moreover, the negative effects were significantly greater in families with uninvolved fathers and unsupportive mothers. Hagan, MacMillan and Wheaton concluded that the low level of social capital contributed by parents was insufficient to counter the loss of community social capital through residential change.

Alexander, Entwisle and Horsey (1997) considered a change in residence as a contributing event to the factor "family change" in a multistage study using logistic regression seeking to identify predictors of dropping out in high school. Alexander, Entwisle and Horsey used data from the Beginning School Study. The Beginning School Study involved 790 children randomly drawn from children enrolled in first grade, during the Fall of 1982, in Baltimore City Public Schools. The Beginning School Study itself was longitudinal, monitoring academic progress and personal development through high school. The overall factor family change was found significant at the .001 level, however, a number of collinear ties were found within the factor family change and between family change and other factors. Alexander, Entwisle and Horsey concluded that changes in residence acted as stressors for children within the family context.

Tucker, Marx, and Long (1998) examined how the influence of residential change on the school lives of elementary-aged children varied by family structure. Tucker, Marx and Long found that children who moved an average or above average number of times were not significantly harmed if they resided in families in which both biological parents were present. However, any move was associated with an adverse school life for children in other family structures. Tucker, Marx, and Long defined an adverse school life as matching any one of five indicators: the child was currently repeating a grade for academic reasons; the respondent perceived that the child was "below the middle" or

"near the bottom" as a student; the child had been "sometimes" or "often" disobedient at school within the previous three months; the child "sometimes" or "often" had trouble getting along with teachers within the previous three months; the child had been expelled or suspended from school within the previous year because of his or her behavior. Tucker, Marx, and Long used data from the 1988 Children's Supplement of the National Health Interview Survey. There were 4,595 children, aged 7 to 12, in the sample.

Swanson and Schneider (1999) considered the relationship between residential change and three educational outcomes: dropping out; mathematics achievement; and behavioral problems in school. Swanson and Schneider distinguished between adolescents who made residential changes that entailed school changes, adolescents who made residential changes that did not entail school changes, adolescents who made school changes that did not entail residential changes, and adolescents who neither changed residences or schools. Swanson and Schneider found that these relationships could be either positive or negative depending on other factors including race, ethnicity, income and participation in athletics. It also mattered whether the residential change occurred early in high school or late. Finally, it mattered whether the residential change was motivated by a stressful life circumstance such as change in family composition. Adolescents who changed schools between 8th grade and 10th grade, with or without residential change, were significantly more likely than adolescents who did not change schools to drop out of school before 10th grade. School changers who did not drop by 10th grade, however, were significantly less likely than non-changers to drop out during 11th or 12th grade. Adolescents who changed schools during 11th or 12th grade were also more likely than non-changers to drop out. Participation in athletics significantly reduced

dropping out among school changers. This was true regardless of whether the change in school was also accompanied by a change in residence or not. Adolescents who changed during 11th and 12th grade had negative changes to behavior. No behavior change, however, was detected for early changers. Educational change between 8th and 10th grade, with or without residential change, had a positive effect on mathematics achievement for Asians, adolescents from families with higher socioeconomic status, adolescents who had parents who expected them to graduate from college, adolescents who earned higher grades, or adolescents who attended private school although the gains did not appear until late in high school. The effect did vary in strength, however, between those who changed schools and changed residences, and those who only changed school. Educational change late in high school, however, had a detrimental effect. Swanson and Schneider attributed the relationship between residential and educational change and these three outcomes to disruptions to adolescents' social support networks in the home, neighborhood and school.

Mental Health Outcomes

Several of the studies examining the relationship between residential change and educational outcomes theorized relationships between residential change and mental health but did not directly examine them (Alexander, Entwisle, & Horsey, 1997; Haveman, Wolfe, & Spaulding, 1991). Studies that have directly examined the relationship between residential change and mental health outcomes include Hendershott (1989) and Meadows (2007).

Hendershott (1989) examined the relationships between residential change and several aspects of adolescent mental health including depression and self-concept.

Hendershott's sample were 205 adolescents, out of 440 adolescents who were asked to participate, from the sixth, seventh and eighth grades of a public middle school in the southwestern region of the United States. Hendershott's method of analysis was multiple regression, using ordinary least squares. Hendershott found that residential change was meaningfully related to one dimension of adolescent self-concept, that of mastery over the environment: beta -.208 for the category one or two moves, significant at .01; beta -.207 for the category five or more moves, significant at .05. Never moved was the reference category. The category three or four moves was not significant. However, Hendershott did not find expected relationships between residential change and several other dimensions of self-concept including self-denigration and self-esteem. Hendershott found a relationship between residential change during the past year and depression, beta .148 significant at .05. However, no relationship was evident after 12 months.

Meadows (2007) included recent move as a contributor to total stress in her study of similarities between genders in the impact of social support on adolescent depression and delinquency. Meadows found a statistically significant relationship, $p<.05$, between recent move and the outcome variables. Meadows sample, derived from the nationally representative, school-based survey of health and health-related behaviors, Add Health, was 12,958 adolescents in grades 7 through 12.

Social Support Outcomes

The Theoretical Foundations section of this study discussed loss of social support as one of the intermediates through which residential change might affect adolescents getting a first employee-type job. One study that examined the relationship between residential change and social support was completed by Pettit and McLanahan (2003).

Pettit and McLanahan asked whether residential change led to short-term losses of social connections likely to contribute to childhood well-being. Additionally, Pettit and McLanahan asked whether socio-economic status of the destination neighborhoods influenced the impact of residential change on the low-income children involved in the experiment. This study is notable, in part, because few studies in social networks have been experimental. Pettit and McLanahan's sample was 331 children, ages 6 to 17 at time of the follow-up interview, in 231 families who were enrolled in the Moving to Opportunity (MTO) experiment in Los Angeles in fall of 1996. At the time of the follow up interview, the families had lived in their current residences at least six months. The program moved families from areas of highly concentrated poverty to areas of less concentrated poverty. Families were assigned to one of three groups. Families assigned to the 'MTO Group' were offered a housing voucher and supportive services and were required to move to a neighborhood where the poverty rate was below 10 %. Families assigned to the 'Section 8 Group' were offered a housing voucher with no support services and no restrictions. Families in the 'Control Group' were offered nothing. All participants were living in public housing at the time of enrollment. Pettit and McLanahan found that moving reduces the odds of parents talking to the parents of their children's friends and it reduces the total number of activities children participate in, though residential change is not significantly associated with participating in any particular activity. However, moving to a higher socio-economic neighborhood was not more difficult for low-income children than moving to other neighborhoods.

Social Control Outcomes

Noting the disruption that residential change might cause to intergenerational closure, it was surmised in the Theoretical Foundations section of this study that while parents and teachers may have expectations regarding when adolescents enter the world of work, or what kinds of jobs adolescents take, or alternatively, that adolescents forgo early job holding to concentrate on other activities such as school, residential change may impact the ability of parents and teachers to establish those expectations as effective norms and sanctions. Moreover, in the Theoretical Foundations section of this study, the congruence between Coleman's (1988b) concept of intergenerational closure and the older social control theory, proposed by Shaw and McKay (1942), then revised by Sampson and Groves (1989) into a model of social disorganization, was noted. Consequently, studies that have found relationships between residential change and loss of social control have bearing on this study.

Silver and Miller (2004) included residential change as a factor in their study of sources of informal social control in Chicago neighborhoods. Silver and Miller used data from the Community Survey of the Project on Human Development in Chicago Neighborhoods. The survey was conducted in 1995. It gathered the assessments of 8,782 residents of the structural and cultural properties of their neighborhoods. Using hierarchical linear modeling, Silver and Miller found the rate of residential change to be negatively associated with local crime rates, -.104 (.018), significant at .001. Silver and Miller concluded that high residential change within a community contributes to a loss of social control.

Sun, Triplett, and Gainey (2004) included residential change in their study of neighborhood characteristics and crime, explicitly testing Sampson and Groves'(1989) model of social disorganization. Sampson and Groves' model has similarities to Coleman's (Coleman, 1988b) conception of social closure. Using structural equation modeling, Sun, Triplett and Gainey found direct paths between residential change and local social ties, .34, residential change and unsupervised youth, .40, residential change and robbery, .39, and residential change and assault, .34. Sun, Triplett and Gainey found connecting paths between residential change and robbery through local social ties, .62. Sun, Triplett and Gainey found connecting paths between residential change and assault through local social ties, .58, and through unsupervised youth, .39. All paths were significant at the .10 level. Sun, Triplett and Gainey found inter-correlations between residential change and racial heterogeneity, -.50, significant at .01, and between residential change local social ties .33, significant at .05 level.

Friendship Networks

It was noted in the Theoretical Foundations section of this study that information about, or access to, jobs is one kind of resource available through social networks. Moreover, it was noted in the Theoretical Foundations section that such information is frequently acquired through relationships formed for other purposes. One such purpose would certainly be friendship. One study that examined the relationship between residential change and friendship was completed by South and Haynie (2004). South and Haynie used data from the National Longitudinal Study of Adolescent Health to examine the impact of residential and school change on the structure of adolescent friendship networks. The data set includes nearly 13,000 adolescents. Descriptive statistics for

network size, by movers and stayers, have means of 7.33 and 8.68 respectively, with a difference of 1.35 significant at the .01 level. Statistically significant differences for other aspects of network size, structure and position were also found between movers and stayers including popularity, 1.09, isolation .02, network density, .02, has best friend ,.08, best friend reciprocates, .05, centrality, .17, proximity prestige, .02, and mean alters' popularity, .51. Regarding the impact that residential change has on parents' knowledge of adolescents' social networks, statistically significant differences were found between movers and stayers for parent has met child's best friend, .04, and number of child's friends parent has talked to, .46. South and Haynie continued their analysis with regression, including residential change as a predictor of the aspects of network size, structure and position already described, alongside a number of control variables. Residential change was found to predictive of density, has best friend, centrality, proximity prestige, and mean alters' popularity, significant at the .01 level. Residential change was predictive of best friend reciprocates at the .05 level. South and Haynie conclude that the social networks of adolescents who have moved are "less complete, less satisfying and less conducive to pro-social behavior" (2004, p. 316).

Summary of Residential Change and Adolescent Outcomes Other Than Employment

The relationships between residential change and various adolescent outcomes other than employment were alluded to in the Statement of the Problem section of this paper. Within this Literature Review, however, specific studies were examined in more detail, focusing on the causes to which the authors of the studies attributed the effects of residential change on non-employment outcomes. These effects included: (a) residential change being stressors for children within the family context; (b) residential change

leading to the loss of effective norms and sanctions through the loss of intergenerational closure; (c) residential change disrupting adolescent's social support networks in the home, neighborhood and school; (d) residential change leading to a loss of social capital; (e) children changing schools often missing key educational material; (f) children and parents who are new to schools having less information about the school system; (g) teachers being less likely to invest time and energy in a child they do not know well; (h) children who are attending new schools feeling socially marginalized and, as a consequence, associating with other marginalized adolescents; (i) residential change leading to higher percentages of unsupervised youth, and (j) the social networks of adolescents who have made recent residential changes being less complete, less satisfying and less conducive to pro-social behavior. This study extended the literature on the relationships between residential change on adolescent or later-life outcomes by examining whether a relationship also existed between residential change in early adolescence and first employee-type employment.

Adolescent Employee-Type Employment

This section discusses adolescent employee-type employment including who works, what occupations they are most likely to fill, which industries they are most likely to be employed in, and how adolescents find work.

Who Works

This study was concerned with residential change as a predictor of first employee-type employment. However, many other factors have been found to be predictive of adolescent work as well. A difficulty of interpreting this literature is that careful

distinction between freelance-type work, self-employed work, and employee-type work has not always been made by researchers.

Academic Achievement and School Behavior

Suspension from school, time completing homework and amount of time attending school are all aspects of academic achievement and school behavior that have been considered as predictors or correlates of adolescent employment.

Utilizing information about incidents of school suspension found in the 1979 round of the NLSY97 and the 1980 round of the NLSY79, Rothstein examined whether having been suspended from school correlated with being employed at age 15 or 16. Rothstein found the results ambiguous. Rothstein conjectured that adolescents who have been suspended may be less oriented towards academics, and consequently may desire to enter the world of work sooner. However, adolescents who have been suspended may face a disadvantage if employers use the school as a reference.

Entwisle, Alexander and Olson (2000) examined the relationship between academic performance and work consistency between the ages of 13 and 17. Although almost all students had begun working by age 17, only 23% worked every school year from age 13 to 17, while 52% had worked every year after they first entered, Alexander, Entwisle and Olson's definition of consistency. The school histories of consistent versus inconsistent workers contrasted sharply. Inconsistent workers were significantly more likely to have been disengaged from school from age 13 to 17, 45% versus 36%, and to have dropped out by age 20, 44% versus 35%. Additionally inconsistent workers spent significantly less time completing homework.

Age

Age has been found to be a predictor adolescent employment in its own right. At the same time, age is often correlated with other predictors.

In the study cited for academic achievement and behavior, Rothstein (2001a) found that there is a marked increase in employee-type employment from age 15 to age 16, possibly due to legal restrictions on the kinds of work, and hours of work, 15 year olds can do. In a separate study, but also using the NLSY97 dataset, Rothstein (2001b) found that, at age 14, 57.2% of all adolescents held some kind of job, of which 42.8% held freelance jobs and 23.8% were employee-type jobs. Entwisle, Alexander and Olson (2000) examined Baltimore adolescents' paid work from age 13 to 18 using data from the Beginning School Study (BSS). The BSS is a longitudinal study that began tracing 790 students in 1982. The students were in 1st grade at that time. In the year Entwisle, Alexander and Olson accessed the data, 81% of the students still remained in the study. Entwisle, Alexander and Olson found that slightly more than half of all students worked during the school year at age 13 and 14. By age 15, employment rates rose to 75% and remained above 70% thereafter. The study was limited, though, to occupations, job levels and consistency of work during the school year, September to June, excluding Summers.

Ethnicity and Race

Incorporated into most studies in some fashion, results for ethnicity and race consistently show that White youth are more likely to work at all ages. Ruhm (1997) compared employment rates for Black, Hispanic and White adolescents. Ruhm found that White adolescents work more than Black or Hispanic adolescents do. Additionally,

Ruhm found that the gap widens as adolescents advance in grades. Entwisle, Alexander and Olson (2000) found that from the earliest years, Black adolescents are less likely to work than White adolescents. Entwisle, Alexander, and Olson began their study at age 13, At age 14, greater numbers of Black adolescents reported having applied for a job than White adolescents, 71% versus 58%, although greater numbers of White adolescents reported holding a job, 62% versus 54%. At age 15, greater numbers of White adolescents got a job they applied for than Black adolescents, 76% versus 58%, significant at the .001 level. Rothstein (2001a) found, using both the NLSY79 cohort and NLSY97 cohort, that White adolescents were more likely to work than either Black or Hispanic adolescents at age 14. At age 17, the gap still favored White adolescents over Black or Hispanic adolescents, 77% to 67%. Gardecki (2001), using the NLSY97, found that White adolescents were more likely to work than Black or Hispanic adolescents. Morisi (Morisi, 2008), using data from the Current Population Survey which began collecting data on persons aged 16 to 24 in the mid 1980's, found that although the rate of employment for all teens has moved downward in the last 20 years, white youths continue to be employed at greater rates than black or Hispanic youth.

Family and Household Member Employment

Parental or household employment has been conceived a number of ways. Findings have also been conflicting. Rees and Gray (1982) found that parental characteristics had no effect on adolescent employment while having siblings who worked had a positive impact. Rothstein (2001a), on the other hand, found that living in a household where the mother worked was a predictor of employment for 15 and 16 year

old adolescents. Gardecki (2001) found having at least one parent in the labor force positively influenced the likelihood of adolescents working.

Family Income

Family income has an ambiguous impact on adolescent employment. Entwisle, Alexander and Olson (2000) found that high socioeconomic status influenced adolescents to either enter the labor market early, age 13 or 14, or late, after age 17, while adolescents of low or middle socioeconomic status entered at age 15 or 16. Rothstein (2001a) found that adolescents from families in the lowest income category, under $25,000 per year, were least likely to work over the course of a year but were likely to work a high number of hours per week if they did. Adolescents in the highest income category, over $70,000 per year, on the other hand, were likely to work a high average number of weeks per year but a low average number of hours per week. Rothstein found causation ambiguous. Rothstein concluded that while adolescents in households with lower income might have more need to work, they may also live in depressed areas with less opportunity to work. Moreover, they may have less access to transportation.

Family Structure

Findings regarding family structure as a predictor or correlate of adolescent employment are mixed. Using data from the NLSY79, Garasky (1996) found that family structure had only limited effect on teenage employment. Zick & Allen (1996) found living in a single-parent family increases the time adolescent girls spend doing paid work. However, adolescent's age and the mother's education and employment status appear to be more important influences on time allocation than is family structure. Data came from 1987-88 time-diary survey of 214 two-parent, two-child families and 99 single-mother,

two-child families in Utah. Entwisle, Alexander and Olson (2000) found that family structure predicted whether adolescents entered the world of work at ages 13 and 14, at ages 15 and 16, or after age 17. They observed that 56% of adolescents of the adolescents who entered the world of work at ages 13 and 14 resided in two-parent families while 69% of adolescents who entered the world of work after age 17 did. By contrast, only 43% of adolescents who entered the world of work during age 15 or 16 resided in two-parent families. Rothstein (2001a) found, using both the NLSY79 and the NLSY97, that adolescents in two-biological parent or two-parent families were more likely to work than adolescent in female-parent only families, while adolescents not living with a parent were least likely to work.

Gender

Gender has been found predictive of when adolescent enter the world of work, how much work adolescent do, and the kinds of work that adolescents do. In an early study of who works, how much those who work do work, and what they do, Greenberger and Steinberg observed that "the earliest experiences of boys and girls in the formal labor force mirror sex differentials in the adult labor force" (1983, p. 481). For their study, Greenberger and Steinberg used data from interviews of 3,101 10^{th} and 11^{th} graders adolescents present on one particular day of school in October 1978 at four Orange County, California high schools. Work was defined as regular, paid, at least three hours per week. Adolescents involved in family owned businesses, or who were being supervised by a family member, were excluded from the study. Greenberg and Steinberg observed that first jobs were significantly segregated by gender. Girls worked fewer hours per week than boys. Girls typically earned lower hourly wages than boys did.

Hourly wages were higher in job types that were dominated by males. These differences extended over the course of youngsters' early job histories. This study, however, is now relatively dated. Moreover, the single suburban locale Greenberg and Steinberg conducted their study in was not necessarily representative of the nation.

More recently, McNeal (1997) found that the gender of working adolescent was predictive for many job categories: while only 4.7 % of babysitters are male, 86 % of manufacturing workers, farm employees, and lawn- or odd-job workers are male. Ruhm (1997) found that males work more than females. However, the difference narrows as adolescents advance grades in school. Huang, Pergamit and Shkolnik (2001) found that 12 and 13 year old females were more likely than boys to hold informal jobs and to spend more hours on the job. By contrast, Rothstein (2001b) found that 15 to 17 year old males are more likely to work than 15 to 17 year old females. At the same time, 15 to 17 year old males are more likely to work 21 hours or more per week than 16 or 17 year old females. An observation by Lin (2001) may explain at least part of these differences in work rates: significant differences appear between the social networks and embedded resources of females and males. Gender role beliefs may also play a role.

Grade Level

Manning (1990), Ruhm (1997), and Rothstein (2001a) all found grade level to be a strong predictor of adolescent employment, with the three studies developing the theme progressively. Going first, Manning established that adolescents in higher grades were more likely to be employed, finding that the number of adolescent working in a given year increased from just over half of 10^{th} grade students, to nearly all 11^{th} and 12^{th}

Grade students. Ruhm confirmed Manning's essential findings, though rates differed slightly – two-thirds of all juniors worked, while three-quarters of all seniors worked. Ruhm added, however, the finding that average number of hours worked also increases. Going last, Rothstein sought to find out if grade level was a distinct factor, or a simply a proxy for age, by holding age constant. As the previous studies had found, Rothstein (2001a) found that adolescents in higher grades worked more. Rothstein concluded that while age and grade level often co-vary, they influence adolescents in different ways. The influence of age is at least partly due to adolescents age 16 or older facing fewer regulatory restrictions on the kinds or hours of work they can do. Moreover, adolescents who are age 16 or older may be motivated to work in order to buy a car or some other consumer good or service, younger adolescents may be restricted from having. The effect of being in a higher grade level, on the other hand, comes from adolescents in higher grades have more working peers around to influence them.

Neighborhood Effects

Bayer, Ross and Topa, (2005) asked whether individuals who live in close proximity to one another, within one block, were more likely to work together. Bayer, Ross and Topa used a sample drawn from the 1990 Census, Boston Metropolitan area. Bayer, Ross and Topa found a positive relationship between close proximity and working together. Moreover, the relationship varied with similarities in age, gender, marital status and presence of children in the home. This study suggests informal hiring networks although its methodology does not allow causal inferences. This also suggests individuals living in neighborhoods where few neighbors worked would have less access to informal hiring networks.

Parent Education Level

Following up on research that showed a decline in overall teen employment since the 1970's, Porterfield and Winkler (2007) examined the possibility that adolescents from more highly educated and economically advantaged families were being steered away from paid activities towards activities that were expected to increase their likelihood of acceptance to, and success in, college. Porterfield and Winkler used data from three sources: the 1995-96, 1999-2000, and 2003-04 outgoing rotation groups of the Current Population Survey; the 1975-76 to 2003-04 rounds of the Monitoring the Future survey; and the 2003 and 2004 rounds of the American Time Use Survey. Using the Current Population Survey data and the Monitoring the Future data, Winkler and Porterfield found in each time period studied that the employment rate rose for teens living in single-family structures as parent education level increased. For teens living in two-parent families, however, the pattern appeared hill-like. The employment rate for adolescents in two-parent families whose parents had finished high school was higher than those whose parents had little or no high school. However, the employment rate peaked as parents acquired some high school then dropped for adolescents whose parents acquired four-year degrees. Looking at the persistence of these two patterns over time, Porterfield and Winkler observed that while the overall employment rate was declining for all adolescents, the decline was steepest for those with the most highly educated parents.

Regulatory Environment

Deere, Murphy and Welch (1995) and Hao, Astone, and Cherlin (2001) both explicitly consider aspects of the regulatory environment as they relate to adolescent

employment, while Rothstein (2001a) cites aspects of the regulatory environment both as part of the motivation for her study and as a possible explanation for her findings.

Deere, Murphy and Welch (1995) considered changes to the Federal minimum wage as a predictor of employment, including adolescent employment. They examined the changes in minimum wages that occurred in 1990 and 1991 when minimum wage rates rose twice: from $3.35 to $3.80 and $3.80 to $4.25. These rises were the first in nine years. The rate changes had a significantly negative effect on the employment of low wage earners in all age groups but particularly on those aged 15 to 19. For those 15 to 19 the percent change was -15.4 while the next most significantly impacted age group was 20 to 24 at -5.6 percent. The rate changes also had a variable effect on race, with Blacks being most impacted with a percent change of -4.8 while Whites had a percent change of -3.1.

Neumark and Wascher (1995) sought to explain the variable impact of change to minimum wage on different groups of teenagers. Neumark and Wascher merged individual-level panel data from the May Current Population Surveys for the period 1979-1992 with state-year data on minimum-wage levels and state economic characteristics. Minimum wages may lead to small net disemployment effects for teenagers as a whole. Perhaps more importantly, however, changes to minimum wages lead to significant shifts in school enrollment. Increasing minimum wages increases the probability that teenagers will leave school to become employed or work more hours. Paradoxically, increasing minimum wages also increases the probability that teenagers will leave school and become unemployed. The explanation for this paradox is that

teenagers either leave school with the intent to become employed, then don't succeed in finding a job, or they don't succeed in remaining employed after initially finding jobs.

Hao, Astone, and Cherlin (2001) examined the relationship between the welfare reform legislation of 1996, the Personal Responsibility and Work Opportunity Reconciliation Act, and adolescent employment rates. Hao, Aston and Cherlin collected information on state welfare policies during 1994-1999 from the Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services to create ten variables to code each state on the presence or absence of ten characteristics of welfare policy in each month of the five-year period of the study. They used data from the Current Population Survey 1994-1999 to control for local labor market conditions. They used data from the NLSY97 to construct person-month histories of school enrollment and employee-type employment from the first month after adolescents reach age 14 until they reach the month before their 19th birthday. They also used data from the NLSY97 to control for a number of individual and family factors. Hao, Astone and Cherlin found evidence that state welfare policies may affect low-income adolescents' decisions concerning school enrollment and employment: (a) low-income adolescents were less likely to take a job while in school in states with more stringent welfare policies; (b) low-income adolescents were less likely to keep a job while in school in states with more stringent welfare policies.

Regulatory issues were of concern to Rothstein as well. Rothstein (2001a) conducted her study of whether 15 and 16 year-old adolescents were working more in 1997 than in 1979 in part because a National Research Panel council recommended regulatory changes to the number of hours of work allowed for 16 year olds. Rothstein

concluded, however, that work rates had not substantially changed between the two decades. Consequently, she questioned whether the concern expressed was truly warranted.

Religious Activity

Garasky included religious activity as a predictor of adolescent employment, and found it statistically significant. Garasky (1996) considered it "worthy of further consideration" (p. 36). Along similar lines, Coleman (1988b) found participation in religious activity to be a predictor of academic achievement. Coleman observed that religious activity is a form of intergenerational closure. Religious activity may also be a venue for developing social relationships outside the family.

Risky or Delinquent Behavior

In the study cited repeatedly earlier, Rothstein (2001a) found that marijuana and tobacco use was a predictor of working at age 15 or 16. Rothstein conjectures that adolescents who used marijuana or tobacco may be more anxious to enter the adult world, including the world of work.

Sexual Intercourse

Evidence for a relationship between adolescent employment and adolescent sexual behavior comes from multiple fields of study, with adolescent employment viewed alternately as a response variable to sexual behavior, as a predictor of sexual behavior, or as a covariant of sexual behavior in the prediction of some other adolescent outcome. Early sexual intercourse was one of the possible negative outcomes of early entrance into the world of work mentioned in the introduction to this study. Using census tract data, Brewster (1994) found that living in areas of high unemployment raised the risk of first

intercourse for young women. Brewster surmised that lacking opportunities to achieve adult status through work, young women were using sexual activity as the marker of adulthood instead. By contrast, Rich and Kim (2002) found that every month of previous employment increased the probability for first sexual intercourse by 1%. Moreover, working more hours per week increased the risk. The conflicting findings can be partly reconciled, however, by observing that work and sexual activity are both again being seen as markers of adulthood. Rich and Kim surmises that the young women they observed working may have been doing so because they desired greater independence from their parents, or desired to assume adult roles earlier. At the same time, entering the world of work exposed the young women to others also seeking to assume roles that are more adult. Finally, Rich and Kim observed that working reduces parental monitoring. Rich and Kim utilized data from the NLSY79. Other researchers who have found relationships between sexual behavior and employment in adolescence include Bozick (2006), Dorius and Heaton (1993), Ku, Sonenstein and Pleck (1993), Levine and Huffner (2006), and Valois and Dunham (1998).

Transportation and Access

At least one study considered possession of a driver's license and/or access to a car as a predictor of adolescent employment. Rothstein (2001a) suggested that the possession of a driver's license or access to a vehicle may facilitate working while the need to pay for the expenses of driving may motivate working. This predictor may co-vary with age and family socioeconomic status.

Unemployment Rates

Rothstein (2001a) included overall national unemployment rates in her study comparing the employment rate of 15 and 16 year olds in 1979 to the employment rate of 15 and 16 year olds in 1997. Rothstein concluded that rates have not substantially changed between decades.

The Nature of Adolescent Work

The statement of the problem referred to the ongoing debate in the United States of America over whether, how intensely, and in what capacities adolescents ought to work. The statement of the problem noted that the relationship between residential change in early adolescence and first employee-type jobs may only be important if the job start dates for mobile adolescents are much earlier or much later than, or if the job characteristics are different for mobile adolescents from, what is judged desirable by those concerned. The statement of the problem enumerated in some detail the benefits and costs of early work, and noted that the mean age adolescents expected to start working was age 16.2, while parents expected their children to start working at age 16.6. Not discussed, however, was the nature of adolescent work. This section expands on that.

Studies of adolescent employment have consistently shown that while adolescents can be found in a wide variety of industries and occupations, most are heavily concentrated in just a few. For example, using the NLSY97 which coded jobs according to Census 1997 Industry and Occupation Codes, Oettinger (2000) found that 8 occupations accounted for 63.7% of jobs for 17 year olds while 7 industries accounted for 60.3% of jobs for adolescents. The 8 occupations were: food service workers, 20.0%; sales clerks and newsboys, 7.5%; private household workers, 7.3%; cleaning service

workers, 6.9%; farm workers, 6.8%; stock handlers, 6.3%; gardeners and groundskeepers, 4.5%; recreation and amusement workers, 4.4%. The 7 industries were: eating and drinking places, 20.8%; private households, 8.8%; agricultural production and services, 7.9%; grocery stores, 6.5%; elementary and secondary schools, 5.7%; public administration, 5.6%; and entertainment and recreation services, 5.0%.

Observing adolescents concentrated in similar jobs several decades earlier, Ginzberg (1977) labeled the kinds of jobs open to adolescents as "bad". Ginzberg noted that the types of jobs generally open to youth were characterized by low wages, odd hours, irregular shifts, including nighttime and weekend work, seasonality, high turnover, lack of benefits, and lack of advancement opportunities. Tilly (1995) faulted adolescent jobs for having rigid rules and restrictions, and providing such detailed and scripted interactions with customers that adolescents were reduced to machines. Ritzer (2000) decried adolescent jobs for having no space for creativity.

In their contribution to the debate over whether or not adolescents should be employed, Greenberger, Steinberg and Ruggiero (1982) observed that "a job is not just a job". Consequently, they sought to provide a multidimensional understanding of adolescent work environments, noting that costs and benefits of adolescent employment may vary by the nature of the work environment. They compared and contrasted six jobs commonly held by adolescents on three dimensions: opportunities for learning; opportunities for exercising initiative or autonomy; and opportunities for social interaction. The six jobs examined were: food service work, retail sales/cashier work, clerical work, manual labor, operative/skilled labor, and cleaning.

Greenberger, Steinberg and Ruggiero found that food service workers, retail workers, and operative/skilled labor workers had the highest opportunities for personal initiative or autonomy. Food service workers also experienced high rates of interaction. Cleaners, by contrast, experienced very little interaction. Cleaners had the least varied tasks while all other categories were quite comparable in task variety. Youth in food service, retail, and clerical jobs interacted more often with adults than other jobs. Food service workers and operative/skilled laborers spent a higher percentage of time with peers than did other types of workers. Food service workers and operative/skilled laborers had higher rates of interaction with age-mates than other occupations. Greenberger, Steinberg and Ruggiero used data on 91 adolescents, derived from a larger sample of 531 adolescents, attending 10th and 11th grade students at four high schools in Orange County, California. Among the original sample, 212 were holding their first employee-type jobs, while 319 had never worked. The sample was reduced to 91 as a result of deciding to limit the study to the six most frequently held jobs. The descriptive data was gathered by observing the adolescents at work.

In an ethnographic study of affluent suburban teens working in a coffee shop operated by a major national chain, Besen (2004; 2005; 2006) sought a different perspective on the occupations and industries open to adolescents. She asked how adolescents themselves perceived their work, less concerned as they might be with adult considerations such as benefits, full time wages, or advancement. She found that while a job in a coffee shop may not be attractive to adults, it was to the youth she observed. These youth reported enjoying the social aspects of work, the relative autonomy in the work place, and the opportunity to express their individuality while serving. Moreover,

students did not mention making money as the primary benefit of their part time jobs, but rather the opportunity for personal development, the opportunity to contribute to the community in some way, and the opportunity to learn about work environments. Finally, Besen noted that what the adolescents learned from their part time jobs differed from what they learned about the world of work through other sources. Adolescents rarely mentioned friends or mass media as providing information about job requirements. Parents and friends conveyed more negative information about work than positive information, describing work as difficult, stressful, and not fun. Parents were also more future-oriented, focused on what kinds of jobs might make good careers. Working in the coffee shop, however, the adolescents learned that work could also lead to more immediate satisfaction through personal accomplishments. As for school, it did not provide adequate information either about finding fulfillment in a present job, or a future career.

Job Search Methods and Relationships Adolescent Utilize to Find Work

Holzer (1987) utilized the 1981 panel of the NLSY79 to examine differences in Black and White adolescents job search patterns, considering males only. Checking with friends and relatives, followed by direct application without referrals, were the most frequently used methods of search. These were also the most productive. Checking with friends and relatives accounted for 35% of jobs attained for White adolescents and 33% of jobs obtained by Black adolescents. Meanwhile, direct application accounted for 34% of jobs attained by White adolescents and 26% obtained by Black adolescents. Other methods considered included state or private employment agencies, responding to newspaper ads, school or community place services and other institutional activities.

Holzer attributed the difference in outcomes for White adolescents and Black adolescents to the relative strength of White and Black social networks. Holzer also considered the possibility that both methods tend to reveal the race of the incumbent, allowing latent racial expectations of employers to suppress Black success using those methods. Holzer's findings could also be explained in part by Schachter's (Schachter, 2001a; 2001b) and Long's (1973).

Conclusion

A high rate of residential change is a characteristic of American life yet varies for individuals and families by a number of factors including age, race and ethnicity, education level, housing tenure, family structure, and economic level. Individuals and families make the decision to move for a number of reasons. These reasons also vary by the factors previously mentioned.

Previous researchers have found relationships between residential change and a number of adolescent outcomes other than employment. Educational outcomes found to be related to residential change include: academic performance, attainment and completion. Behavioral outcomes found to be related to residential change include: delinquency, crime and violence; use of controlled substances, and sexual behavior and reproduction. Social outcomes in adulthood found to be related to residential change include: family structure and social integration. Mental health related outcomes included: depression and perceived mastery over environment. In their discussions, these researchers put forth a number of explanations for these relationships, including explanations that relate to the theoretical framework of this study. These earlier studies,

then, provide precedent for considering the relationship between residential change and first jobs.

Previous researchers have already proposed and tested a wide variety of predictors for adolescent employment. These have included: academic achievement and school behavior, age, ethnicity and race, family structure, gender, grade level, neighborhood effects, parent education levels, regulatory environment, religious activity, risky or delinquent behavior, sexual intercourse, transportation and access, and unemployment rates. Beyond the one study mentioned in the Background and Need for Study section of this dissertation, however, no studies were found that considered residential change as a predictor of adolescent employment. The one study mentioned in the Background and Need for Study section was limited to consideration of the effect of residential change that occurred after age 14. Thus, this present study extends the literature.

There has been an ongoing public policy debate over the age at which adolescents ought to start working employee-type jobs. On one side of the debate, it has been argued that working during high school contributes to the development of human and social capital skills needed for success in adulthood. On the other hand, it has been argued that working during high school has opportunity costs and risks that offset any potential benefits. This debate made it worthwhile to seek to identify predictors, such as residential change as this present study has done, of the age at which adolescents start working employee-type jobs. Further, within the discussion of whether or when adolescents ought to start working, a number of researchers argued that the quality of adolescent jobs may determine whether holding jobs in adolescence is beneficial or not.

In light of this debate, this present study considered how residential change in early adolescence might be related to the certain characteristics of first jobs.

CHAPTER III: METHODOLOGY

Restatement of Research Purpose

As stated earlier, this study had two related purposes. The first purpose was to explore the relationship between moving with one's family during early adolescence and the age at which adolescents acquired their first employee-type jobs. Background factors found by earlier researchers to be predictive of adolescent job holding were included as controls. The relationship was further examined utilizing characteristics of jobs found in the literature regarding adolescent and adult employee-type employment. These characteristics, as adapted for first jobs, included: (a) industry of the first employee-type job, (b) occupation of first employee-type job, (c) environment typology of occupation of first job, (d) prestige of occupation of first job, and (e) complexity, or difficulty of learning tasks, of occupation of first job.

Had a relationship been found between mobility and any characteristic of getting one's first employee-type job been found, a second purpose of this study was to determine if the relationship involved moderator variables related to the three aspects of social capital theory described in the Theoretical Foundations section of this proposal: (a) resource connectedness through participation in social networks, (b) social support and (c) intergenerational closure. This second line of inquiry was shaped by whether the relationship found pursuing the first purpose applied to the whole sample, or to particular demographic groups. This second line of inquiry was also shaped by whether the relationship found involved interactions with other predictors. This study sought to describe the interactions between mobility and those predictors. This purpose was limited, however, by the variables available in the archival data being used for the study.

Research Design

The research design of this study involved the secondary analysis of data from the 1997 Cohort of the National Longitudinal Study of Youth (NLSY97) data set (Center for Human Resource Research, 2006). Data analysis consisted of three stages. Stage 1 consisted of identifying or creating the predictor and response variables of the study using data found in the NLSY97. Stage 2 consisted of screening those identified or created variables for missing data or other anomalies, and managing found problems. Stage 3 consisted of conducting the specific statistical tests required to answer the questions related to the purposes of this study.

Sampling Design and Procedures

This study utilized a sub-sample of the 1997 Cohort of the National Longitudinal Survey of Youth (NLSY97) dataset, produced by the Center for Human Resource Research at Ohio State University, in conjunction with the National Opinion Research Center at the University of Chicago, under contract with the Bureau of Labor Statistics, Department of Labor, United States of America. The sub-sample is described more precisely within the Data Collection sub-section of Research Design. The NLSY97 collects information on the circumstances that influence or are influenced by labor market behavior of individuals who were 12 to 16 years old as of December 31, 1996. The NLSY97 as a whole consists of a nationally representative sample of 8984 such individuals, composed of two sub-samples: a cross-sectional sample of 6,748 individuals, and an over-sample of 2,236 Black and Hispanic individuals. The cross-sectional sample was designed to be representative of young people living in the United States during the first survey year, 1997, and born January 1, 1980 through December 31, 1984. The

oversample was designed to provide sufficient numbers of Black and Hispanic adolescents for statistical analysis.

The NLSY97 cross-sectional sample and the oversample were derived from two independently selected, stratified, multistage area probability samples. In the first stage of each sample, 100 primary sampling units (PSUs) were chosen from the 1990 National Opinion Research Center (NORC) master probability sample of the United States. For the cross-sectional sample, a PSU was defined as either a metropolitan area, or one or more non-metropolitan counties combined, with 2,000 or more housing units. For the oversample of Blacks and Hispanics, a PSU was defined differently; NORC merged counties with high percentages of minorities to create areas with 2,000 or more housing units. After identifying each samples' PSUs, some were found to overlap. Thus, the total number of PSUs was 147. Regardless of which sample the PSU was chosen through, segments containing one or more blocks, and at least 75 housing units, were then selected. The total number of segments derived in this manner was 1,748. Finally, NORC identified a subset of housing units within each segment to visit during the second stage of sampling. The total number of housing units chosen was 96,512.

In the second stage of each NLSY97 sample, NLSY97 interviewers visited each housing unit to administer a short interview called the simple screener. At households that had been identified to be part of the cross-sectional sample, if the household contained one or more occupants that fell within the targeted age range, the interviewers asked those individuals to participate the first survey year, 1997. At households that had been identified to be part of the oversample, if the household contained one or more occupants that fell within the targeted age range, and were Black or Hispanic, those

individuals were asked to participate the first survey year. Combining the two samples, screening interviews were successfully completed in 75,291 housing units, identifying 9,806 individuals to interview the first survey year. Ultimately, 8,984 individuals actually did participate. Those individuals comprise the NLSY97 Cohort (Center for Human Resource Research, 2003; 2006)

Instrumentation and Selection of Subjects

As a secondary analysis of an existing data set, the description of instrumentation has two aspects: the description of the data collection processes of the original data set; and the description of the data collection processes for information from other sources appended to, or combined with, the original data set. This includes the development of the Nakao and Treas prestige scores, the Holland environment typology, and the Holland complexity scale. Description of the original data set is included in this section. Descriptions the Nakao and Treas prestige scores, the Holland environment typology, and the Holland complexity scale are provided in the appendixes after the introduction of the variables utilizing that data.

This study utilized the May 2006 release of the Event History and Main File Data of the NLSY97. This was the public-release version of the NLSY97, cumulative for the first eight survey years, 1997 to 2005. The surveys were annual events. The study frame for this secondary analysis, however, was narrower, bounded by the 14^{th} and 19^{th} birthdates of the subsample included in the study.

The Event History and Main File Data included data collected through a number of different instruments: (a) the simple screener utilized to identify youth for the study; (b) the youth questionnaires asked each survey year; (c) the household income update

asked survey years 1997 to 2002; (d) the household roster compiled during the first survey and updated through the youth questionnaire in subsequent survey years; (e) the non-resident roster compiled initially during the first survey year and updated through the youth questionnaire in subsequent survey years; (f) the parent questionnaire asked during the first survey year; (g) school surveys conducted in 1996 and 2000; and (h) an electronic version of the Armed Services Vocational Aptitude Battery taken by participants in 1997 or 1998. Extensive documentation was released with the Event History and Main File data set. This documentation included (a) the texts of the original surveys, (b) a codebook, (c) a handbook, and (d) appendixes to the handbook that described the various index or scale variables created by summing other variables. The Bureau of Labor Statistics maintains a running list of errors that have been found and reported at <http://www.bls.gov/nls> web site. Error notices also appear in NLS News, available on that same site. The available documentation was used to aid in data screening, to avoid making interpretive mistakes and, where appropriate, to support construct validity.

Although raw data were often available in the data set for any given question, this study utilized “roster variables”, “created variables”, or “key! variables” [sic] when available. “Roster variables” are variables containing similar information on a number of persons, schools, or employers. The roster-structure allowed the information to be collected and analyzed by the survey staff in an efficient and accurate way. The roster structure was important for this study because several predictor and response variables were formed by searching within particular NLSY97 rosters for the information necessary to form those variables. “Created variables” are variables that either contain

information collected through multiple NLSY97 instruments or that contain information from non-NLSY97 sources. Created variables that contained information from multiple NLSY97 instruments have the advantage that survey staff checked the information for consistency. Created variables that contain information derived from non-NLSY97 have the advantage that the information contained has generally found widespread use and been validated through multiple means by those researchers. "Key! variables" [sic] are variables for which data were either compiled before the surveys were administered, or were collected early in the surveys, then used to guide the paths and sequences of questions asked later in the surveys. "Key! variables" [sic] have the advantage of having no missing data since the information contained determined inclusion of the adolescents in the NLSY97 and/or the type and sequence of questions asked through out the survey (Center for Human Resource Research, 2003; 2006).

Data Collection

As a secondary analysis, no new data were collected. However, the original NLSY97 data were not collected with the particular research questions of this study in mind. Appropriate existing variables had to be identified, and in some cases transformed, to be useful. Useful information was also not necessarily collected each survey year nor of all respondents. This, in combination with the age range of the NLSY97 cohort, necessitated limiting the sample to adolescents born in 1984, living with a mother figure at age 14, and who remained in the United States long enough following their 14th birthday to be observed at least once. With these limitations, sample size for this study was 1,675 adolescents. Variable identification processes and transformations are described in the Data Analysis section of this study. No Institutional Review Board

approval was required for this study due to the use of archival data. An Email from the University of San Francisco IRB Office Review Coordinator documenting this fact is attached as Appendix A.

Data Analysis

This section describes the three stages of data analysis more completely.

Stage 1

During Stage 1, the predictor and response variables were identified or created for the six questions related to the primary purpose. In addition to the predictor of interest, *residential change 12 to 14,* the predictors for the analysis for all six questions included *age, race/ethnicity*, *gender*, *household income to poverty ratio*, *region* of country, and characterization of area as *rural/urban*. For Question 1, *age* was represented by ten dichotomous variables, each spanning a half year: *age 14* to *age 18.5*. For Questions 2 through 6, *age* was represented by five dichotomous variables, each spanning a year: *age 14* to *age 18*, Found to be non-linear during preliminary evaluation as a predictor, *residential change 12 to 14* was categorized for all six questions as: *0 moves*; *1 move*; and *2 or more moves*. *Race/ethnicity* had three categories: *Black, not Hispanic; Hispanic;* and *Other. Other* was set as the category to which the others were compared. *Gender* was dichotomous: 0 if *male*; 1 if *female. Region* had four categories: *West; South; North Central;* and *Northeast. Northeast* was set as the group to which the others were compared. *Rural/urban* was dichotomous: 0 if *rural*; 1 if *urban. Region* and *rural/urban* were both included as rough proxies for local labor market conditions.

The response variables differed for each question. For Question 1, which examined the relationship between *residential change 12 to 14* and the *age* of first

employee-type employment, the response variable was a dichotomous variable that indicated whether the adolescent had *reported*, or *not reported*, starting a first job at a given age between ages 14 and 19. The variable was coded as 1 if the adolescent *reported* starting a first job. Otherwise, the variable was coded 0.

For Question 2, which examined the relationship between *residential change 12 to 14* and the *industry* in which adolescents first worked, the response variables were a set of dummy variables representing the four most commonly reported categories of *industry*, defined according to the 2002 Census Industry Code system, plus a dummy variable aggregating all other categories. Preliminary examination of the data showed *leisure and hospitality*, *wholesale and retail sales*, *education and health services*, and *professional and business services* to be the four most commonly reported industries. The variable aggregating all other categories was called *other*. Each variable was coded as 1 if the adolescent *reported* starting a first job within a given time period within the category of interest. Otherwise, the variable was coded 0.

For Question 3, which examined the relationship between *residential change 12 to 14* and the *occupations* of the first employee-type jobs, the response variables were a set of dummy variables representing the four most commonly reported categories of *occupations*, as defined using the 2002 Census Occupation Code system, plus a dummy variable aggregating all other categories. Preliminary examination of the data showed *food preparation and related*, *sales and related*, *office and administrative support*, and *buildings and grounds* to be the four most commonly reported categories of *occupations*. The variable aggregating other categories was called *other*. Each variable was coded as 1

if the adolescent *reported* starting a first job within a given time period within the category of interest. Otherwise, the variable was coded 0.

For Question 4, which examined the relationship between *residential change 12 to 14* and the *prestige* of the *occupations* of the first employee-type jobs, the response variables were a pair of dummy variables representing *prestige* of first job, if reported, as either *below median* level of prestige or *above median* level of prestige. Each variable was coded as 1 if the adolescent *reported* starting a first job within a given time period within the level of interest. Otherwise, the variable was coded 0. The prestige level was determined by matching the 1990 Census Occupation Codes for first jobs found in the NLSY97 to the Nakao and Treas (1992) Prestige Scores. For more information on the coding process, see Appendix C.

For Question 5, which examined the relationship between *residential change 12 to 14* and the *environment* typology of the *occupation* of the first employee-type jobs, the response variables were a set of dummy variables representing the four most commonly reported categories of *environment* typology, plus a dummy variable aggregating all other categories. Preliminary examination of the data showed the four most commonly reported categories of *environment* typology to be: (a) *realistic, enterprising, and conventional*; (b) *conventional, social and enterprising*; (c) *realistic, enterprising and social*; and (d) *enterprising conventional, and realistic*. The variable aggregating all other categories was called *other*. Each variable was coded as 1 if the adolescent *reported* starting a first job within a given time period within the category of interest. Otherwise, the variable was coded 0. The *environment* typology of jobs were determined by matching the 1990 Census Occupation Codes for first jobs found in the

NLSY97 to Holland's environment typology codes, using a table found in Gottfredson and Holland (1996).

For Question 6, which examined the relationship between *residential change 12 to 14* and the *complexity* of the *occupation* of the first employee-type jobs, the response variables were a pair of dummy variables representing *complexity* of first job, if observed, as either *below median* level of complexity or *above median* level of complexity. Each variable was coded 1 if the adolescent *reported* starting a first job within a given time period within the level of interest. Otherwise, the variable was coded 0. The complexity level for jobs was determined by matching the 1990 Census Occupation Codes for first jobs found in the NLSY97 to the complexity index developed by Holland using a table found in Gottfredson and Holland (1996). Holland's complexity index theoretically ranges from 0 to 100. Higher scores indicated that occupations had more difficult-to-learn tasks.

Stage 2

Stage 2 consisted of screening the NLSY97 variables that were used in the study for missing data or other anomalies, and managing found problems. This was particularly necessary since, as a secondary analysis, the secondary researcher did not observe the processes of collecting or entering data. Analysis of *gender* and *race/ethnicity* found no missing data. Missing data was found in all other variables.

There are three basic strategies available for managing missing data: listwise deletion, pairwise deletion, and imputation of missing data (Cohen, Cohen, West, & Aiken, 2003; Little & Rubin, 2002; Schafer, 1997). Additionally, event history analysis methods, when used as in this study, are sufficient to manage missing data in response

variables (Lee & Wang, 2003; Singer & Willett, 2003). Imputation may be further characterized as explicit modeling or implicit modeling. Explicit modeling includes mean imputation, regression imputation and stochastic regression imputation. Implicit modeling includes techniques such as hot deck imputation, substitution, cold deck imputation and composite methods. Listwise deletion may be a reasonable solution for managing missing data when incomplete cases comprise only a small fraction of all cases. (Cohen, Cohen, West, & Aiken, 2003; Little & Rubin, 2002; Schafer, 1997). Given both the rate of missingness in particular variables and the combined overall rate, however, listwise or pairwise deletion would have reduced efficiency and raised bias in this study. Consequently, multiple imputation was utilized for missing data in the predictors. The process and results of multiple imputation are described in Appendix D.

Stage 3

Stage 3 consisted of conducting specific statistical tests to answer the questions related to the purposes of this study. As noted earlier, the NLSY97 provides longitudinal information. This permitted the analysis of each question to reflect the dynamic patterns of how adolescents started their first jobs as they aged, using event history analysis methods, rather than reflecting only whether adolescents had started their first jobs by a particular age. This approach avoided the problems associated with respondents dropping out over the course of the survey. This approach also avoided the problems associated with respondents not starting a first job before the end of the survey. In avoiding these problems, the approach made maximum use of the information in the survey (Agresti, 2002; Cox & Oaks, 1984; Singer & Willett, 1991).

Given the inclusion of year and month of birth only for each respondent within the NLSY97, the most appropriate model for estimating the occurrence of getting a getting a first job as adolescents aged, was the discrete time, event history analysis, model described by Allison (1982), Singer and Willett (2003), and others. However, general estimating equations, with logit links, as described by Agresti (2002), were substituted for the logistic regressions Allison, Singer and Willett, and others had described. This was done to ameliorate the problem of inaccurate standard errors noted by those authors with the logistic-regression based models. The inaccurate standard errors for those models result from observations not being independent of one another.

To conduct the discrete time event history analysis for Question 1, the conceptual outcome, *age* at which adolescents started their first job, was treated as a set of fundamental predictors representing half-year increments, *age 14* to *age 18.5*, within a series of general estimating equations structured for repeated measures. These fundamental predictors were used in lieu of a constant. One case was included in the data set for each half-year of age, at the start of which, the adolescent had not yet started a job. Start of first job reported within a given half-year of age (yes=1, no=0) was the response variable. To include both between subject and within subject effects in the estimation of standard errors, an *identification* variable was utilized to identify observations related to the same subject, while *age* in half years, was utilized to distinguish observations within subjects. For the estimation of within subject effects, the working correlation matrix was assumed to have an exchangeable structure. General estimating equations are robust, however, to misspecification of the working correlation (Agresti, 2002). The link utilized to relate the predictors to the binomial distribution of the response variable was the logit.

The substantive predictors suggested by theory and literature were then added to the block of age predictors, including the one of interest in this study, residential change (Singer & Willett, 2003).

To check the assumption that the relationship of each substantive predictor to the response variable varied proportionally as adolescents aged, an interaction variable for each combination of age predictor by substantive predictor, was included. To check the assumption that continuous variables had a linear relationship to the response through the link function, each variable was binned into a small number of equally spaced and sized categories, then regressed-upon again. In the event a continuous variable was found non-linear, a categorical transformation was used in all subsequent analysis.

Testing for sampling effects is a concern when using data from complex surveys. To do so, DuMouchell and Duncan (1983), elaborated on by Winship and Radbill (1994), recommended that *sampling weights* provided with the data, and their interactions, be added as predictors during early model building, then removed as it becomes apparent which combination of demographic and geographic predictors make the *sampling weights*, and their interactions, unnecessary. Further, to identify predictors to include, DuMouchell and Duncan suggested reviewing survey documentation. This was done. The NLSY97 Technical Sampling Report (Moore, Pedlow, Krishnamurty, & Wolter, 2000) identified *race/ethnicity*, *gender*, *region*, *urban/rural* and *family income* as dimensions by which the sample differed from the population it was meant to represent. The *sampling weights* provided with the data set did indeed become non-significant as a predictor with the inclusion of these other predictors. Further, no interactions between the *sampling weights* and *residential change 12 to 14* were found to be significant

predictors of the probability of starting a first employee-type job within any given age period. Consequently, *sampling weights* was dropped as a predictor. Moreover, the conclusion was drawn that the inclusion of *race/ethnicity*, *gender*, *region*, *rural/urban* and *family income* as predictors was sufficient to account for any sampling effects resulting from the multistage sampling process.

Questions 2 through 6 differ from Question 1 in that first employee-type job was redefined within each question as one of several different outcomes, each possibility a category of whichever characteristic of first job was of interest in that question. For example, the different possible outcomes included in the analysis of Question 2, concerned with the industry of the first employee-type job, were start a job in *leisure [or] hospitality*, start a job in *wholesale [or] retail sales*, or start a job in *education [or] health*. These categories of industry were chosen for analysis partly because they occurred most often, collectively comprising nearly half of all adolescent jobs. More importantly, however, they occurred often enough to include the extra predictors needed to construct the discrete time, event history analysis, models used to answer the questions. Because only one of these outcomes could actually occur first, statisticians often describe such outcomes as "competing" (Crowder, 2001). This study will also use this terminology. Structurally, each competing outcome required its own set of general estimating equations. Once computed, the sets of general estimating equations for each competing outcome within a question were then compared with one another to answer the question. As was done for Question 1, *age* was treated as a set of fundamental predictors within each general estimating equation.

A fundamental assumption of the analyses for Questions 2 through 6 was that the occurrence of any one competing outcome within each analysis was non-informative regarding the probability of occurrence of all other possible competing outcomes within that analysis. This assumption was what permitted the analysis to be limited to a sub-set of possible outcomes (Singer & Willett, 2003).

A second consequence of the non-informativeness assumption was that for each competing outcome within any given question, and between questions, a unique set of predictors was possible (Allison, 1984). Viewed predictor-by-predictor, no single predictor necessarily applied to all competing outcomes within, or between, Questions 2 through 6, even if predictive within the model undifferentiated by competing outcomes (Question 1). However, as Singer and Willett (2003, p. 592) cautioned regarding the analysis of competing outcomes in general, developing a separate model for each and every category of outcome would have made the comparison of estimates more difficult. This would be even truer for this study if the response variables *industry*, *occupation*, *prestige* level, and *complexity* level of first employee-type jobs had not been aggregated as they were. Moreover, the use of identical predictors would increase the tenability of the noninformativeness assumption itself. Consequently, this study focused on identifying whether *residential change 12 to 14* was broadly predictive across questions and categories of first jobs, and to what extent, in conjunction with a fixed set of background factors included as controls. However, the results for each question often do suggest a unique set of predictors for each competing outcome within that question.

A third consequence of the non-informativeness assumption was that activities outside the scope of this study that might be thought of as competing with employee-type

employment did not need to be considered. Income producing activities that have been described as competing with employee-type employment include: self-employed or freelance-type jobs (Apel, Paternoster, Bushway, & Brame, 2006); adolescent job-training activities that include compensation such as work study programs or internships; and participation in criminal activities that bring in money or other tangible returns (Fairlie, 2002). Activities that compete in other ways include: community service / volunteerism (Morisi, 2008), school obligations (Morisi, 2008), extracurricular activities inside and outside school, and family activities.

Question 7 was addressed by incorporating variables representing all possible two-way combinations or *residential change 12 to 14* and the background factors being included as controls into the general estimating equations for questions 1 through 6. As noted earlier, these included: (a) gender, (b) race/ethnicity, (c) the ratio of household income to local poverty level, (d) region of country, and (e) whether the adolescent lived in a rural or urban area. Additionally, all possible two-way combinations of *residence change 12 to 14* and the *age* predictors were included. Finally, all possible two-way combinations of the background factors and the *age* predictors were included.

Questions 8 through 10 were contingent upon the results of Questions 1 through 7. In the end, Questions 8 through 10 were not pursued.

CHAPTER IV: RESULTS

This chapter is divided into two sections. Section 1 reports descriptive statistics for the sample. Section 2 addresses the research questions.

Descriptive Statistics

The sample in this study consisted of youth from the NLSY97 born in 1984, living in the United States in 1998, who were also observed at least once following their 14th birthdates. One thousand six hundred seventy five such individuals were found in the NLSY97. Of these, 850 (50.7%) were *female*. Regarding *race/ethnicity,* 429 (25.6%) identified themselves as *Black, not Hispanic,* while 374 (22.3%) identified themselves as *Hispanic. Household income to poverty* ratios ranged from 0.00 to 1,627.00, with the median at 209.10. Geographically, 273 (16.3%) lived in the *Northeast,* 352 (21.0%) lived in the *North Central,* 637 (38%) lived in the *South,* and 413 (24.7%) lived in the *West.* Finally, 1,275 (75.1%) lived in *urban* areas. *Residential change age 12 to 14* occurred for 396 (23.6%), with 271 (16.2%) making *one move* while 125 (7.5%) made *two or more moves*. Table 1 shows Pearson correlations between predictors.

Table 1: Pearson correlations between predictors

	Gender	Race/Ethnicity	Household Income	Region	Rural/Urban	Residential Change
Gender	1	.023*	-.025*	.007	-.008	-.003
Race/Ethnicity	.023*	1	-.268**	.072*	.187**	.102**
Household Income	-.025*	-.268**	1	-.024*	-.013	-.114**
Region	.007	.072**	-.024*	1	.109**	-.013
Rural/Urban	-.008	.187*	-.013	.109**	1	.045**
Residential Change	-.003	.102**	-.114**	-.013	.045**	1

The size of this sample is large. Consequently, event correlations that likely have little practical importance show statistical significance. The one correlation that quite

possibly may be of importance is the one between the ratio of household income to poverty and race / ethnicity.

Addressing the Research Questions

In this section, research questions are addressed one at a time. Within the findings for questions 1 through 6, any relationship(s) found between *residential change 12 to 14* and the response variable(s) pertaining to the question are reported first. Any relationships found between background factors included as controls and the response variable(s) are reported second. This ordering reflects the emphasis of this study on the relationship between *residential change 12 to 14* and first employee-type jobs. Question 7 had no significant results to report. Questions 8 through 10, being contingent upon the findings of questions 1 through 7, were not pursued.

Question 1

Question 1 was concerned with the relationship between moving early in adolescence and the *age* at which adolescents started their first jobs, without consideration of any characteristics of that job. Within this study, 1,512 (90.3%) adolescents reported starting a first employee-type job within the study frame, age 14 to age 19. Meanwhile, 108 (6.5%) adolescents who remained in the study for the duration of the study frame did not report starting a first job by the end of that frame. Finally, 65 (3.9%) adolescents, who were interviewed at least once following age 14, left the study before the end without reporting having started a first employee-type job.

Two or more moves between ages 12 and 14 increased the probability of adolescents starting a job at any given *age* by 35% ($p<.05$). This was reflected in a slightly earlier age, 16.2 versus 16.5, by which 50% of adolescents had started a first job.

This was also reflected in a slightly lower percentage who had not started by age 19, 6% versus 6%. However, the effect of only *one move*, over *zero moves*, was not significant.

Of the background factors included as controls, being *Black* decreased the probability of adolescents starting a job at any given *age* by 26% ($p<.001$) while being *Hispanic* decreased the probability by 19% ($p<.05$). *Gender* did not test significant. *Household income to poverty ratio* did not test significant. Living in the *West* at age 14, in comparison to living in the *Northeast*, decreased the probability of starting a first job within any given age period by 29% ($p<.5$) while living in the *South* decreased the probability 17% ($p<.05$). Meanwhile, the difference for *North Central* did not test significant. *Rural/urban* did not test significant. See Appendix E for unstandardized and standardized betas, and standard errors, found during general estimating equations utilized to answer this question.

Question 2

Question 2 was concerned with the relationship between moving early in adolescence and the *industries* at which adolescents started their first jobs, as defined by the 2002 Census Industrial Codes (Center for Human Resource Research, 2003). Preliminary examination of the data showed *leisure and hospitality* (n =606 or 40 %), *wholesale and retail sales* (n = 314 or 21%), *education and health services* (n = 153 or 10.1%), and *professional and business services* (n =105 or 7%) to be the four most commonly reported categories of *industries*.

The overall impression of results was that there was very little relationship between *residential change 12 to 14* and the *industries* in which adolescents first found jobs. A significant relationship was found only between *two or more moves* and

wholesale & retail sales. This relationship showed a 99% increase in annual probability over *zero moves* and *wholesale & retail sales*. No significant effect for *one move* was found for any category of *industries*.

Of the background factors included as controls, being *Black* showed no significant effect on *leisure & hospitality* or *professional & business services*. Being *Black* did, however, decrease the probability of adolescents starting a job in *wholesale & retail sales* at any given *age* by 43% ($p<.001$), while being *Black* increased the probability of adolescents starting a job in *education & health services* by 106% ($p<.001$). Being *Black* decreased the probability of starting a job in the category aggregating *other* industries by 54% ($p<.01$). Being *Hispanic* showed no significant effect on any category of *industry*. Regarding the effect of *gender* on the categories of *industry*, no significant effect was shown on *leisure & hospitality* or *wholesale & retail sales.* Being *male* increased the probability of getting a job in *education & health services* at any given age by 83% ($p<.01$). Being *male* decreased the probability of getting a job in *professional & business services* by 68% ($p<.01$). Being *male* decreased the probability of getting a job in *other* industries 35% ($p<.01$). *Household income to poverty ratio* did not test significant as a predictor for any category of *industry*. Categories of *Region* of country tested significant as a predictor only for *education & health services*. Those who lived in the *West* were 52% ($p<.01$) less likely than those in the *Northeast* to get a job in *education & health services* while those living in the *South* were 46% ($p<.05$) less likely. *Rural/urban* did not test significant. See Appendix F for unstandardized and standardized betas, and standard errors, found during general estimating equations utilized to answer this question.

Question 3

Question 3 was concerned with the relationship between moving early in adolescence and the *occupations* in which adolescents started their first jobs, as defined by the 2002 Census Occupation Codes (Center for Human Resource Research, 2003). Preliminary examination of the data showed *food preparation and related* (n =358 or 23.7%), *sales and related* (n =336 or 22.2%), *office and administrative support* (n =150 or 9.9%), and *buildings and grounds* (n =132 or 8.7%) to be the four most commonly reported categories of *occupations*. The variable aggregating other categories was called *other*. Having made *two or more* residential moves between 12 and 14 increased the annual probability of starting a job in *sales and related* occupations 49% ($p<.05$) and *other* occupations 44% ($p<.01$). Having made *two or more* residential moves between 12 and 14 decreased the annual probability of starting a job in *building and grounds* 48%. No significant relationship was found, however, between having made *one move* and the probability of starting a first job in any particular category of *occupations*.

Of the background factors included as controls, being *Black* showed no significant effect on *offices & administrative support* or *buildings & grounds*. Being *Black* did, however, decrease the probability of adolescents starting a job in *food preparation & related* at any given *age* by 47% ($p<.001$), while being *Black* increased the probability of adolescents starting a job in *sales & related* by 2% ($p<.05$). Being *Black* decreased the probability of starting a job in the category aggregating *other* occupations by 31% ($p<.05$). Being *Hispanic* showed no significant effect on *office & administrative support* or *buildings & grounds*. Being *Hispanic* decreased the probability of starting a first job in *food preparation & related* by 52% ($p<.001$). Being *Hispanic* increased the

probability of starting a first job in *sales & related* by 13% ($p<.05$). Being *Hispanic* decreased the probability of starting a first job in *other occupations* by 38% ($p<.05$). Regarding the effect of being *male* on the categories of *occupation*, no significant effect was shown on *food preparation & related* or *office & administrative support.* Being *male* increased the probability of getting a job in *sales & related* at any given age by 155% ($p<.001$). Being *male* decreased the probability of getting a job in *building & grounds* by 57% ($p<.001$). Being *male* decreased the probability of getting a job in *other* occupations 45% ($p<.01$). *Household income to poverty ratio* did not test significant as a predictor for any category of *occupation*. No relationships were observed between any categories of *Region* of country or *occupations*. *Rural/urban* did not test significant. See Appendix G for unstandardized and standardized betas, and standard errors, found during general estimating equations utilized to answer this question.

Question 4

Question 4 was concerned with the relationship between moving early in adolescence and the level of *prestige* associated with occupations in which adolescents started their first jobs, as defined by Nakao and Treas Prestige Scores (Nakao, Hodge, & Treas, 1990; Nakao & Treas, 1990). Before creating *below median* and *above median* response variables, the occupations of first jobs were observed to have Nakao and Treas Prestige Scores ranging from 17 to 74, with a mean of 29.58, a mode of 29.00, and a median of 29.00. The index of Nakao and Treas Prestige Scores itself has a theoretical range of 0 to 100. Having made *two or more* moves increased the probability 37% of starting one's first job in an occupation with a *prestige* level *above the median*. Having made *two or more* moves, however, was not found to be significantly related to any

change in the annual probability of starting one's first job in an occupation with a *prestige* level *below the median*. Having made *one move* was not found significantly related to a change in the probability of starting one's first job in either level of *prestige*.

Of the background factors included as controls, being *Black* decreased the probability of starting a first job in an occupation with *above median prestige* by 39% ($p<.05$). Being *Hispanic* decreased the probability of starting a first job in an occupation with *below median* prestige by 30% ($p<.05$). Being *male* decreased the probability of starting a first job in an occupation with *below median* prestige by 39% ($p<.05$). *Household income to poverty ratio* did not test significant as a predictor for either category of *prestige*. No relationships were observed between any categories of *region* of country or *prestige,* with the exception of *South* which, in comparison to *Northeast*, decreased the probability of starting a job with *below median* prestige 26%. *Rural/urban* did not test significant as a predictor of *prestige* level. See Appendix H for unstandardized and standardized betas, and standard errors, found during general estimating equations utilized to answer this question.

Question 5

Question 5 was concerned with the relationship between moving early in adolescence and the *environment* typology associated with occupations in which adolescents started their first jobs, as defined by Holland's theory of personalities and environments (Gottfredson & Holland, 1996; Holland, 1997). Preliminary examination of the data showed the four most commonly reported categories of *environment* typologies for those reporting jobs to be: *conventional, social and enterprising* (n =195 or 12.9%); *realistic, enterprising, and conventional* (n =186 or 12.3%); *realistic,*

enterprising and social (n =123 or 8.1%), and *enterprising conventional, and realistic* (n =76 or 5%). The variable aggregating all other categories was called *other*. Having made *two or more* moves was found related to 5% increase in the probability ($p<.01$) of starting a job in an occupation with a *realistic, enterprising, and social* typology. Having made *two or more* moves was found related to a 70% increase in the probability ($p<.05$) of starting a job in an occupation with an *enterprising, conventional and realistic* typology. Having made *two or moves* was not found significantly related to the probability of starting one's first job in a job with a *realistic, enterprising, and conventional* typology, *conventional, social, and enterprising* typology, or *other* typologies. Having made *one move* was not found to be significantly related the probability of starting one's first job in any particular *environment* typology.

Of the background factors included as controls, being *Black* showed no significant effect on *conventional, social & enterprising* or *enterprising, realistic, & social*. Being *Black* did decrease the probability of adolescents starting a job in *realistic, enterprising, & conventional* occupation at any given *age* by 39% ($p<.01$). Being *Black* also decreased the probability of adolescents starting a job in *realistic, enterprising, & social* occupation by 40% ($p<.05$). Finally, being *Black* decreased the probability of starting a job in the category aggregating *other* occupations by 26% ($p<.05$). Being *Hispanic* showed no significant effect on *conventional, social & enterprising,* nor *realistic, enterprising, & social*, nor *enterprising, conventional, & realistic*. Being *Hispanic* decreased the probability of starting a first job in both *realistic, enterprising, & conventional* and *other* by 30% ($p<.05$). Regarding the effect of being *male* on the *environment typologies* of first employee-type jobs, statistically significant decreases were found for *realistic,*

enterprising, and conventional and *realistic, enterprising, & social*, with changes in annual probability of 77% ($p<.01$) and 79% ($p<.001$) respectively. Meanwhile, statistically significant increases related to being *male* were found for *conventional, social and enterprising* and *enterprising, conventional, & realistic,* with changes of 209% ($p<.01$) and 73% ($p<.05$), respectively. *Household income to poverty ratio* did not test significant as a predictor for any category of *environment typology*. Living in the *West, South,* or *North Central*, as compared to living in the *Northeast*, increased the probability of starting a first job in an occupation with a *realistic, enterprising & social environment* at any given age by 79% ($p<.05$) , 76% ($p<.05$) and 68% ($p<.05$) respectively. Meanwhile, living in the *South* or *North Central* regions, as compared to living in the *Northeast*, increased the probability of starting a first job in an occupation with an *enterprising, conventional & realistic environment,* 71% ($p<.05$) and 92% ($p<.05$) respectively. Living in an *urban* area was related to a 24% ($p<01$) decrease in probability of starting a first job in an occupation with *realistic, enterprising, & conventional* environment. Living in an *urban* area was related to a 46% ($p<01$) increase in probability of starting a first job in an occupation with *conventional, social & enterprising* environment. Finally, living in an *urban* area was related to a 42% ($p<05$) increase in probability of starting a first job in an occupation with *enterprising, conventional & realistic* environment. See Appendix I for unstandardized and standardized betas, and standard errors, found during general estimating equations utilized to answer this question.

Question 6

Question 6 was concerned with the relationship between moving early in adolescence and the level of complexity, or difficulty of learning tasks, associated with occupations in which adolescents started their first jobs, as coded using Holland's Complexity Scale (Gottfredson & Holland, 1996). Before creating *below median* and *above median* response variables, the occupations of first jobs were observed to have Holland complexity scores ranging from 36 to 68, with a mean of 47.79, a mode of 51.00, and a median of 47.00. The Holland Complexity Scale itself has a theoretical range of 0 to 100. Having made *two or more* moves, was significantly associated with a 31% decrease in the probability of starting one's first job in an occupation with *above median* complexity. Having made *two or more* moves, however, was not associated with either an increase or decrease in the probability of starting one's first job in an occupation with *below median* complexity. Having made *one move* did not show a relationship to the probability of starting one's first job in either level of complexity.

Of the background factors included as controls, being *Black* decreased the probability of starting a first job in an occupation with *below median complexity* by 41% ($p<.001$). Being Hispanic decreased the probability of starting a first job in an occupation with *below median complexity* by 27% ($p<.001$). Neither *household income to poverty ratio* nor *gender* were found to be significantly related to *complexity*. No relationships were observed between any categories of *region* of country or *complexity,* with the exception of *North Central* which, in comparison to *Northeast*, increased the probability of starting a job with *below median complexity*. Living in an *urban* area, in comparison to a *rural* area, increased the probability of starting a first employee-type job in an

occupation with *above median complexity 39%*. See Appendix J for unstandardized and standardized betas, and standard errors, found during general estimating equations utilized to answer this question.

Question 7

Question 7 was concerned with identifying interactions between *residence change 12 to 14* and each of the other background factors included in the analyses of the other questions. As noted earlier, these included: (a) gender, (b) race/ethnicity, (c) the ratio of household income to local poverty level, (d) region of country, and (e) whether the adolescent lived in a rural or urban area. Question 7 was also with identifying interactions between *residence change 12 to 14* and the *age* predictors, and between the background factors and the *age* predictors. To examine this question, all possible combinations of two-way interactions were created. These were then incorporated into the series of pre-screening runs of general estimating equations conducted for questions 1 through 6. A p value of .25 was established as criteria for inclusion in later runs. None of the two-way interactions tested significant during the pre-screening runs. Consequently, they were not included in the general estimating equations ultimately reported.

Question 8-10

Questions 8 through 10 were not pursued. Question 8 was concerned with identifying predictors related to the size of adolescents' social networks, and their positions within those networks, which mediated between *residential change 12 to 14* and the characteristics of first employee-type jobs. Question 9 was concerned with identifying predictors related to adolescents' social support which mediated between

residential change 12 to 14 and the characteristics of first employee-type jobs. Question 10 was concerned with identifying predictors related to intergenerational closure which mediated between *residential change 12 to 14* and the characteristics of first employee-type jobs. These questions were, however, contingent upon the findings of the first seven questions. Neither the findings for the first six questions, summarized in table 2 (displayed on next page), nor the findings for question 7, show patterns suggestive of further tests to do with the immediate sample or archival data set. Additionally, the ability to examine this question was restricted by the information available in the archival data set. See Chapter V for more discussion of this issue.

Summary

Total sample size was 1,675 adolescents, of which 1,512 found employee-type jobs within the study frame. Relationships between residential mobility between ages 12 and 14, and the various response variables by which first employee-type jobs were described in questions 1 through 6, were found only for adolescents who had made 2 or more moves. However, these findings do not show clear patterns suggestive of how residential change actually influences first employee-type employment. Question 7, concerned with interactions between predictors, had no significant results to report. Consequently, its findings do not suggest how residential change actually influences first employee-type employment either. Questions 8 through 10, being contingent upon the findings of questions 1 through 7, were not pursued.

Table 2: Significant percent changes in probabilities found in questions 1 through 6

		Gender		Race/Ethnicity			Income	Region			Area		Moves		
		Ma	Fe	Bl	Hi	Wh		W	S	NC	NE	Urb	Rur	≥2	1	0
Q1	Age		R	-26	-19	R		+29	-17		R		R	+35		R
Q2	Leisure & Hospitality		R			R					R		R			R
	Wholesale & Retail Sales		R	-43		R					R		R	+99		R
	Education & Health Services	+83	R	+10		R		-52	-46		R		R			R
	Professional & Business Services	-68	R			R					R		R			R
	Other Industries	-35	R	-54		R					R		R			R
Q3	Food Preparation & Related		R	-47	-52	R					R		R			R
	Sales & Related	+15	R	+2	+13	R					R		R	+49		R
	Office & Administrative Support		R			R					R		R			R
	Buildings & Grounds	-57	R			R					R		R	-48		R
	Other Occupations	-45	R	-31	-38	R					R		R	+44		R
Q4	Below Median	-39	R		-30	R			-26		R		R			R
	Above Median		R	-39		R					R		R	+37		R
Q5	Conventional, Social, Enterprising	+20	R			R					R	+46	R			R
	Realistic, Enterprising, conventional	-77	R	-39	-30	R					R	-24	R			R
	Realistic, Enterprising, & Social	-79	R	-40		R		+79	+76	+68	R		R	+5		R
	Enterprising, Conventional & Realistic	+73	R			R			+71	+92	R	+42	R	+70		R
	Other Environments		R	-26	-30	R					R		R			R
Q6	Below Median	-41	R	-27		R				+37	R		R			R
	Above Median		R			R					R	+25	R	+44		R

Notes: Q1 - Probability of starting at given age; Q2 - Industry; Q3 - Occupation; Q4 - Prestige; Q5 – Environment; Q 6 – Complexity; R – Reference Group; Ma – Male; Fe – Female; W – West; S – South; NC – North Central; NE – Northeast; Urb – Urban; Rur - Rural

CHAPTER V: DISCUSSION

This chapter is organized into six sections. The first section provides an overview of the problem and the theoretical base for the research questions. The second section, organized in order of the research questions investigated, provides a summary and discussion of the findings for each question. The third section provides a summary and discussion of other findings. The fourth section puts forth conclusions drawn from the study's findings. The fifth section makes recommendations for future research. The sixth section makes recommendations for practice.

Restatement of the Problem

This study predicted that the probability that an adolescent would start his or her first employee-type job in any given age period of the study between ages 14 and 19 would be different for those who had made residential changes in early adolescence and those who had not. Moreover, this study predicted that the nature of first employee-type jobs, as defined by industry, occupation, prestige level, environment typology, and complexity level, would be different for movers and non-movers. These predictions were based on social capital theory, previous findings reported in the literature on the development of occupational awareness and intention among children and adolescents and the job search methods used by adolescents, and previous findings reported in the literature on the relationship between residential change in childhood or adolescence and other adolescent or later life outcomes. However, no previous studies were found in the literature examining these particular hypotheses. For the purposes of this study, moving in early adolescence was defined as one or more changes in residence between 12th birth date and 14th birth date.

Research Questions

Question 1

The first research question focused on the nature of the relationship between residential change in early adolescence and if, and if so during what age, adolescents acquired their first employee-type jobs undifferentiated by any particular characteristics of the jobs. Drawing upon both social capital theory and observations of the importance of social networks for finding work, this study predicted that the probability that an adolescent would start his or her first employee-type job in any given age period of the study would be different for those who had made residential changes and those who had not. Not predicted was the direction of the difference.

On the one hand, it was thought possible that adolescents who had changed residences 12 to 14 might experience a delay finding their first employee-type job since residential change might reduce the size of, or place adolescents in a less favorable position within, social networks through which adolescents might find employee-type jobs. This would reduce the information available to adolescents regarding jobs available. Moreover, it was thought possible that adolescents who had changed residences might experience a delay finding their first employee-type jobs since they would likely experience less social support outside their immediate families due to members of the broader community not being familiar with them. Within their own families, residential change might reduce social support by acting as a stressor on adolescents within the family context. Beyond social capital, this might also reduce adolescent perception of self-efficacy. Regarding intergenerational closure – the third aspect of social capital discussed in the theoretical section of this dissertation - residential change age 12 to 14

might lead to a delay in starting a first employee-type job by reducing intergenerational closure. This mediating factor might, in turn, effect the ability of parents, teachers or other adults to establish any expectations they had that adolescents acquire some formal work experience earlier, as opposed to later, in life. Finally, beyond social capital, residential change 12 to 14 might lead to an ill fit between the knowledge adolescents had acquired about the world of work prior to their move and employments opportunities available where they now lived.

On the other hand, residential change might lead to early employee-type employment by reducing opportunities for informal work acquired through social networks. Residential change 12 to 14 might reduce the information about such work through its effects on the size of adolescents' social networks, or their positions within their social networks. Residential change 12 to 14 might also reduce opportunities for informal work by reducing trust, expected returns, extent of reciprocal obligations, willingness to lend a hand, or other components of social support. Positively, as families often move to improve either the environments in which they reside, or as parents advance in careers, residential change might place adolescents in social networks with more or better resources, including access to employee-type employment.

Beyond social capital, residential change might disrupt participation in activities that compete with employee-type employment. It was also possible that more frequent residential changes, and earlier job seeking, are both related to some other factor such as the occupations of parents, economic need of the family, or family instability.

This study did find a relationship between *residential change 12 to 14* and if, or if so during what *age*, adolescents acquired their first employee-type job undifferentiated by

any particular characteristic of the job. However, the relationship found was significant only for one category: *two or more moves* between ages 12 and 14. For this group of adolescents, residential change increased the probability of starting one's first employee-type job within any given *age*. No interactions with *age* were found significant for either category of residential change. Additionally, no interactions with other predictors were found.

Question 2

The second research question focused on the nature of the relationship between moving early in adolescence and the *industries* in which adolescents started their first employee-type jobs. This study predicted that the probability that an adolescent would start his or her first employee-type job in any given category of *industry* would be different for those who had made residential changes and those who had not. Not predicted was which *industries* would be favored, though there was some suspicion that adolescents who had recently moved might find it more difficult to find work in less common *industries*.

Finding jobs through social networks favors those whose social networks are large and diverse, and hence resource rich. Those who have moved recently may have smaller, more homogeneous, social networks. This may mean that adolescents who have recently moved get less information, both in quantity and diversity, about jobs. If so, adolescents who have recently moved might be expected to be found concentrated in the *industries* already most common among adolescents. Job-recruitment practices within industries may reinforce this. Jobs in *industries* that commonly recruit using prominently posted signs at ordering or check-out counters, such as restaurants or retail stores, might

be easier to find for adolescents who have recently moved, than jobs in *industries* in which recruitment is more commonly done through word-of-mouth, internal recruitment, or recruitment through select venues.

This study found the probability of finding a job in *leisure and hospitality*, and the probability of finding a job in *wholesale and retail sales*, increased. These two categories of *industries* were the most common among all categories of industries. Hence, these findings are consistent with the prediction. However, no corresponding decrease was observed in the less common *industries*. Further, no increase or decrease was found significant between *one move* and any category of *industry*. These findings, then, do not provide a consistent picture of what the relationship, if any, between residential change age 12 to 14 and the *industry* one first finds employment in might be.

Question 3

The third research question focused on the nature of the relationship between moving early in adolescence and the *occupations* in which adolescents acquired their first employee-type jobs. This study predicted that the probability that an adolescent would start his or her first employee-type job in any given category of *occupation* would be different for those who had made residential changes and those who had not. As was true regarding industries, adolescents who have recently moved may get less information, both in quantity and diversity, about jobs. If so, adolescents who have recently moved might be expected to be found concentrated in the *occupations* already most common among adolescents. The visibility of workers, including adolescents, within particular *occupations* may reinforce this. Workers serving as waiters/waitresses, short order cooks,

counter sales staff, for example, are highly visible, while workers serving as file clerks are not.

The findings of this study did not provide clear support for the hypothesis. The increase in probability which was observed for the most common *occupation*, *food preparation and related*, among adolescents who had made *two or more moves*, was not significant. The increase in probability observed for the second most common *occupation*, *sales and related*, for adolescents who had made *two or more moves* did test significant. A decrease in probability was observed, but did not test significant, for the third most common category of *occupation*, *office and administrative support* for those who had made *two or more moves*. The fourth most common category *occupation*, *buildings and grounds*, showed a statistically significant decrease for those who *made two or more moves*. Finally, a statistically significant increase was found for the category that aggregated the less common *occupations*, *other.* No statistically significant relationships were found between the various categories of *occupations* and *one move*.

Question 4

The fourth research question focused on the nature of the relationship between moving early in adolescence and the *prestige* of the occupations in which adolescents first found employee-type jobs. This study predicted that the probability that an adolescent would start his or her first employee-type job in an occupation with *above median prestige* versus an occupation with *below median prestige* would be different for those who had made residential changes and those who had not. Not predicted was the direction of the difference.

On the one hand, it was thought possible that, having larger social networks and benefiting from greater immediate social support, adolescents who had not moved might have access to higher prestige occupations. Moreover, given greater influence and control that comes from greater intergenerational closure, parents of children who have not moved, may be more successful at influencing their children to seek higher prestige jobs. On the other hand, since families are often moving to improve either the environments in which they reside, or as parents advance in careers, residential change may actually place adolescents in social networks with more access to higher prestige occupations.

This study did not find clear evidence of the hypothesized relationship. Having made *two or more moves* was predictive of an increase in the probability of starting a first job in an occupation with *above median prestige*. However, having made *one move* was not predictive of a statistically significant change for either category of *prestige*.

Question 5

The fifth research question focused on the nature of the relationship between moving early in adolescence and the environment typology of the occupations in which adolescents first found employee-type jobs. Holland (1966a; 1973; 1985; 1997) proposed that most people can be classified in terms of six personality types (realistic, investigative, artistic, social, enterprising, and conventional) based on their distinctive patterns of abilities, attitudes, and interests. Moreover, Holland proposed that there are six commensurate model environments that reflect the prevailing physical and social settings in society, with each environment hypothesized to attract, and to be dominated, by its associated personality type. In actual reality, individual personalities and particular

environments are blends of these six ideals, hence the three-characteristic coding system (most dominant characteristic plus second most dominant characteristic plus third most dominant characteristic) commonly used.

Applying Holland's typology of environments to first employee-type jobs, this study assumed that given the opportunity to do so, adolescents would indeed seek first jobs in environments that they thought matched their own personalities. Adolescents who had most recently moved, however, might have less information about work environments. Consequently, they may be more likely to end up in the most common environments, rather than their preferred environments. This study did not have a means for assessing whether adolescents were indeed in their preferred environments, though, so only differences in probability between non-movers and movers in starting a first job in a particular type of environment could be examined.

The findings of this study did not provide a consistent picture of what the relationship might be, if any, between *residential change age 12 to 14* and the *environment* typology one first finds employment in. Having made *two or more moves* between ages 12 and 14 increased the probability of starting one's first employee-type job in an environment combining *realistic, enterprising, and social types* characteristics. Having made two or more moves between ages 12 and 14 also increased the probability of starting one's first employee-type job in an environment combining *enterprising, conventional and realistic* characteristics. However, neither of these were either the first or second most common typologies. Moreover, no relationship was found between any typology and having made *one move* between ages 12 and 14.

Question 6

The sixth research question focused on the nature of the relationship between moving early in adolescence and the *complexity* of the occupations adolescents got for their first jobs, as measured by Holland's Complexity Index. The study hypothesized that potential employers might be more willing to give adolescents they already knew, or had some connection to, the opportunity to prove themselves at more difficult tasks. Intergenerational closure might enhance this, as potential employers might credit adolescent job seekers with the confidence they had in the parents or teachers of the adolescents. The study also hypothesized that adolescents who had better social networks, presumably the adolescents who had not moved, might be able to gather better information about potential jobs, and might, as a consequence, have both identified, and felt more confident applying for, more difficult positions. This study did not find strong evidence to support either hypothesis. The only relationship found was an increase in the probability of finding a first job with *above median* complexity for adolescents who had made *two or more moves*.

Question 7

Question 7 was concerned with identifying interactions between *residence change 12 to 14* and each of the other background factors included in the analyses of the other questions. As noted earlier, these included: (a) *gender*, (b) *race/ethnicity*, (c) the ratio of *household income* to local poverty level, (d) *region* of country, and (e) whether the adolescent lived in a *rural or urban* area. Question 7 was also concerned with identifying interactions between *residence change 12 to 14* and the *age* predictors, and between the background factors and the *age* predictors. As noted earlier, no interactions were found

significant during pre-screening. Consequently, they were not included in the models reported in this study.

Regarding the interaction of *gender* and *residence change 12 to 14,* at least one previous study has shown that the impact of residential change on various aspects of adolescent friendship networks is most pronounced for females (South & Haynie, 2004). Consequently, it is reasonable to think if there is any relationship between residential change and first employee-type employment, that relationship may be different for adolescent *males* and *females*. This study did not find support for that prediction.

Interactions between *residential change 12 to 14* and *race/ethnicity*, *household income*, *region*, and *rural/urban* were important to include as predictors of first employee-type employment because *race/ethnicity*, *household income, region, and rural/urban* have been shown in previous studies to be predictive of residential change for Americans, including adolescents (Schachter, 2001a; 2001b). This study did not, however, find any of these interactions to be statistically significant during pre-screening.

It was important to include interactions between *age* and *residential change 12 to 14*, *age* and *race/ethnicity*, *age* and *household income*, *age* and *region*, and *age* and *rural/urban* because an assumption of the methodology was that the relationship of each substantive predictor to the response variable varied proportionately as adolescents aged. This study did not find any of these interactions significant. Consequently, the assumption was maintained. Additionally, the interaction between *age* and *residential change 12 to 14* was important to consider because the effect of *residential change 12 to 14* on adolescent social networks might wear off with time. The interaction of *age* and *gender* was important to consider because males and females typically mature at different

rates and are known to enter the world of work at slightly different ages. The interaction of *age* and *region* and *age* and *rural/urban* was important given the possibility of localized differences, differences that could vary over time, in employment opportunities.

Questions 8-10

Questions 8 through 10 were not pursued. Question 8 was concerned with identifying variables related to social network size and position that might moderate between *residence change 12 to 14* and first employee-type employment. Question 9 was concerned with identifying variables related to social support that might moderate between *residence change 12 to 14* and first employee-type employment. Question 10 was concerned with identifying variables related to intergenerational closure that might moderate between *residence change 12 to 14* and first employee-type employment. These question were, however, contingent upon the findings of the first seven questions. Additionally, the ability to examine these question were restricted by the information available in the archival data set.

As noted in the discussions for questions 1 through 6, residential mobility may decrease social network size or place adolescents in less favorable locations in their social networks. Residential mobility may also reduce social support and intergenerational closure. These changes might, in turn, (a) influence the probability of starting a first employee-type job at any give age, as question 1 conjectured, (b) impact the ability of adolescents to find jobs in the less common industries, as question 2 conjectured, (c) impact the ability of adolescents to find jobs in the less common occupations, as question 3 conjectured, (d) impact the ability of adolescents to find jobs in the less common environments, as question 4 conjectured; (e) impact the ability or

intention of adolescents to get higher prestige jobs, as question 5 conjectured; or finally, (f) impact the ability or intention of adolescents to get more complex jobs, as question 6 conjectured. No clear patterns emerged, however, in the findings for any of these questions to sustain these conjectures, other than that the relationships found were limited to those making two or more moves. This increased the suspicion that it was not residential change itself impacting first employee-type employment, but that the frequency of moves was a proxy for some other characteristic of this group of adolescents. No interactions were found in question 7, however, that might provide additional insight.

Moreover, three variables in the dataset, expected during the proposal-writing stage for this study to be of use in answering these questions, were found to not have been asked of the sub-sample used in this study, once the age restrictions necessary for creating the residential change variables were applied. These variables contained responses to the following questions: (a) Which of the following best describes your relationship to the person who hired you for this job [the first job]? Parent, other relative, friend of yours, friend of your family's, neighbor, acquaintance, other, none; (b) Was there someone who recommended you, other than the person who hired you? Yes no; and (c) What was that person's relationship to you? Parent, other relative friend of yours, friend of your family's neighbor, acquaintance, none, teacher, church, counselor/mentor, other (specify).

Finally, the relative rarity of any particular category of industry, occupation, or environment, in conjunction with the low number of adolescents who made two or more moves, imposed limits on the number of additional predictors that could be considered.

Summary and Discussion of Other Findings

This study found that 367 respondents (21.1%) had changed residences between ages 12 and 14. This is considerably higher than the 15.3% of adolescents aged 10 to 19, Schachter (2001a; 2001b) found had moved using data from the 1998-2000 Current Population Survey. Like Schachter, this study found that residential change rates varied by *race/ethnicity* and *family income*. This study also found that residential change rates varied by whether or not someone lived in a *rural* or *urban* setting at age 14. This study did not find any relationships between *residential change 12 to 14* and *gender*, or *region*.

This study found overall rates of employee-type job holding at successive ages comparable to rates found by previous researchers, considering differences in methodologies such as how job holding was defined, how discretely time was measured, or whether studies limited their consideration of adolescent job holding to particular seasons. Rothstein (2001a; 2001b) found that 23.8% of adolescents worked for some period of time in employee-type jobs during age 14; this study found a probability of .111 for starting a first employee-type job during the first half of age 14, and a probability of .130 for starting a first employee-type job in the second half of age 14. Since Rothstein used the NLSY97, as this study does, the sum of the probabilities for first employee-type jobs found within this present study, converted to a percentage, should be close to the percentage Rothstein found. The sum of the percentages of this present study, 24.1%, is close to the percentage found by Rothstein, with the difference perhaps being explained by Rothstein using a slightly different subset of NLSY97 youth.

This study found a median start age close to mean ages at which Feldman and Quatman (1988) found adolescents and their parents expected adolescents to start regular

part-time jobs. The median start age in this study was 16.45. As of their 16th birthdates, 52.1% of subjects had not yet started their first employee type job; by age 16.5, however, only 32.0% had not started. Feldman and Quatman had found the mean age adolescents expected to take a regular part-time job to be 16.2 years old. Parents, meanwhile, expected their teens to take their first regular part-time job to be 16.6 years.

Like previous research, such as the work done by Oettinger (2000) or Rothstein (2001a; 2001b), this study found adolescents working in a wide variety of industries and occupations (148 and 161 respectively), though as the other studies had also found, most adolescents were concentrated in just a small number of each. This study found 72.2% of adolescents in the 20 most commonly reported industries; and 69.8% of adolescents in the 20 most commonly reported occupations. The apparent differences in lists are not substantive so much as they reflect the use of different coding systems (this study used Census 2002 codes; Rothstein and Oettinger used Census 1997 Codes) and different focuses on which jobs to tally. This study tallied first employee-type jobs. Rothstein tallied longest jobs held at ages 14 and 15. Oettinger tallied jobs held at ages 17 and 18.

Implications for Practice

Creating awareness of, and preparing adolescents for, the world of work is one purpose of primary and secondary education (Levine & Hoffner, 2006; Salzinger, Antrobus, & Hammer, 1988; Stern, Stone, Hopkins, & McMillion, 1990; Vangelisti, 1988; Vondracek, Lerner, & Schulenberg, 1986; Vondracek & Porfeli, 2003; Young & Friesen, 1992). Identifying populations with unique challenges, and understanding the nature of those challenges, are steps to improving outcomes for adolescents. This study identified a population - those that move two or more times between 12 and 14 - that

enters the world of employee-type employment earlier than others do. However, it is not clear from the literature whether entering the world of employee-type work early is an advantage or disadvantage. Moreover, deciding whether entering the world of employee-type work was, or was not, an advantage, was not the intent of this study.

Implications with regard to practice, then, are hard to draw. If employee-type employment in adolescence is positively related to outcomes in later life, and entering early is better than entering later within the current framework of laws that limit hazardous work, number of hours or other conditions, then perhaps there are no negative aspects of residential change to be concerned with. If early employment were not, however, always beneficial, simply creating awareness of the relationship between residential change and first employee-type employment among parents, teachers, employers and policy makers would be a good first step to improving outcomes for adolescents. As Anderson and Heydenburk observed, "…American children are a hidden constituency with regard to the prevalence of relocation and the effects that accompany relocation" (1999).

Apart from the findings related to residential change and first employee-type jobs, this study found that the characteristics of employee-type jobs adolescents enter for their first jobs changed as adolescents aged. It is not clear from the study is if the changes are solely due to certain occupations not being available to younger adolescents, or if the changes are also due to youth who are older seeking different kinds of jobs. If the purpose of seeking an employee-type job early is simply to earn money, establish more personal autonomy, assume more adult roles, or socialize, this may not matter. However, if adolescents or their parents desire the employee-type jobs adolescents enter to have

certain characteristics, or impart certain attitudes or skills, it may be important to know what is, or is not, available at particular ages.

Future Research

The relationship between residential change and first employee-type employment should be re-examined utilizing a larger sample size. Although the sample size of this study (N = 1675), and more importantly the number of job starts reported (N = 1512), initially appeared ample, any particular industry, occupation or category of environment typology proved to be relatively rare.

Residential change should be re-examined considering distance of move. As was discussed during the Review of the Literature, higher income families move longer distances, while lower income families move more often but shorter distances (Schachter, 2001a; 2001b). Those moving longer distances may experience greater disruptions of their social networks in any one move. Yet, at the same time, those moving longer distances may be better prepared for the experience, or have more to gain through each move. Those moving shorter distances may experience less sever disruptions with each move, particularly if each move does not also include a change in school. However, they may experience cumulative effects.

This study examined residential change between the ages of 12 to 14, merely counting the number of moves within that time frame. This structure reflected the nature of the data in the archival data set. It is possible that this structure does not best measure mobility age in early adolescence. Future research should consider narrower or wider time frames.

The effects of residential change in early adolescence on adolescent employment should be re-examined considering local unemployment rates, quality of jobs in area, quality of housing stock in neighborhoods, or changes in family structure. Families may be moving for reasons related to any of those factors (Schachter, 2001a; 2001b). Additionally, any of those factors may affect adolescent employment directly or through other intermediate processes.

Some measure of residential stability in the community, such as the proportion of homeowners who have lived in the same house for five years within a given zip code, should be included. Residential stability is important to the assimilation of newcomers in neighborhoods. Residents of high-turnover neighborhoods have fewer opportunities to form friendship and organizational contacts, with consequent losses in the ability to acquire information about, or access to, resources that are in the neighborhood (Crutchfield, Geerken, & Gove, 1982; Ross, Reynolds, & Geis, 2000). With respect specifically to employment, Bayer, Ross and Topa (Bayer, Ross, & Topa, 2005) found a propensity for pairs of individuals who live on the same block to work together, pointing to the importance of informal social networks in finding work (2005). Residential stability also contributes to intergenerational closure, reciprocal local exchange, shared expectations and occupational expectations (Ainsworth, 2002; Sampson, 1988; 1991; Sampson, Morenoff, & Earls, 1999; Sampson, Raudenbush, & Earls, 1997).

The relationship between residential change and first employee-type employment should be re-examined using predictors directly related to job search methods. One hypothesis that should be pursued is that adolescents who have recently moved use checking with friends and relatives less to find work than those who have not recently

moved, and use direct application, state or private employment agencies, responding to newspaper ads, or other means, more often than those who have not recently moved. A related hypothesis that should be pursued is that adolescents who have recently moved are more likely to find work in larger, more widely known, multi-location, entities rather than smaller, less widely known, single location entities. Regarding the former type of entities, relocation may be less of a disadvantage since adolescents who have relocated will still be able to utilize some knowledge gained at the previous locale of the type of work the entities are engaged in. Regarding the latter, adolescents who have moved may have learned about that kind of entity at the previous location but not be able to apply that knowledge as effectively, not recognizing familiar names.

This study raised the possibility that adolescents delay entrance into employee-type employment until jobs with particular characteristics became available to them. It is also possible, however, that those who delay entrance into the world of employee-type work until later in adolescence differ from those who enter the world of employee-type work earlier in adolescence in ways that also influence the types of jobs sought. Consequently, the relationship between what kinds of jobs become available at what age, and the decision of adolescents to seek their first employee-type employment, should be examined.

This study found 31 different three-point combinations of Holland's environment typology codes, of 120 possible, represented among the 162 specific occupations found among first employee-type jobs. Applying the typology's classification system to the work histories of adults, Holland (1996) and others have demonstrated that the average career has substantial continuity. That is, individuals tend to move among jobs that

belong to the same or closely related occupational categories. Holland observed, however, that career continuity might mean moving among jobs that belonged to the same or theoretically related categories. Future research should examine if there is continuity in Holland typology between first employee-type jobs and adult employment, taking into account some of the unique characteristics of adolescent employment.

Conclusion

The primary purpose of this study was to examine the relationship between residential change in early adolescence and first employee-type employment. Based on social capital theory, this study predicted that the adolescents who had relocated with their families to different communities, and who may in doing so have experienced disruption to their social networks, may also have experienced changes in their resources and constraints as they sought their first employee-type jobs. Had a relationship been found, a secondary purpose of this study, was to identify intermediate predictors related to three aspects of the theoretical base of this study. This study found some evidence for the hypothesized relationship. However, the sample size for the study, 1675 respondents, proved to be inadequate to answer most of the questions fully, given the relative rarity of any one particular occupation, industry, or environment typology among the first employee-type jobs reported. Consequently, the second purpose of this study was not fulfilled. The evidence does suggest, however, that the hypothesized relationship warrants further research.

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APPENDICES

APPENDIX A: Email Indicating No Institutional Review Board Approval Necessary

From	IRBPHS <irbphs@usfca.edu>
Sent	Monday, April 3, 2006 3:59 pm
To	Stuart Richardson <srichardson@usfca.edu>
Cc	"bloch@usfca.edu" <bloch@usfca.edu>
Bcc	
Subject	IRB Application # 06-029 – No Review Necessary

April 3, 2006

Dear Mr. Richardson,

Thank you for your IRB application. No review is necessary for your study as your investigation involves purely archival data. Please keep a copy of this email for your records.

On behalf of Dr. Patterson, best wishes in your educational and professional pursuits.

Joe Gumina
IRB OFFICE
REVIEW COORDINATOR

APPENDIX B: Validity of Holland's Environment Typology Codes

The environment typology of the occupations in which adolescents obtained their first employee-type jobs was determined using a table found in Gottfredson and Holland (1996, p. 665). This table associated Holland Codes with 1990 Census Occupation Codes. This work was the fifth major attempt to extend the Holland classification to all occupations. Earlier attempts included Gottfredson and Holland (1989), Gottfredson, Holland, and Ogawa (1982), Holland (1973), and Viernstein (1972).

Holland first proposed his schema for relating the personalities of workers to work environments in 1966 (Holland, 1966a). Since that time, Holland's theory, related classifications of personality types and work environments, and related assessment tools have gained prominence in the career counseling field.

Holland proposed that a match between personality and work environment leads to individual success, satisfaction and longevity at work. Consequently, testing congruence between the typologies equated to individuals through the personality assessments devised by Holland and others, and the typologies equated to work environments using assessments devised by Holland and others, has been the major means to assess validity of the overall theory (Gottfredson & Holland, 1996; Osipow, 1987). Studies that have examined the congruence between Holland personalities types and Holland work environments include: Helms (1996); Gottfredson and Holland (1990); Holland (1996); Holland, Gottfredson and Baker (1990); and Mount and Muchinsky (1978). Holland's theory has also been validated by correlating Holland's typologies with typologies developed by others. These include the three-factor NEO

(neuroticism-extraversion-openness) Inventory and its successor, the five-factor NEO Personality Inventory (Gottfredson, Jones, & Holland, 1993).

APPENDIX C: Validity of the 1989 Nakao and Treas Prestige Scores

The status of the occupations in which adolescents obtain for their first employee-type jobs was determined using the ranking of occupational prestige developed by Nakao and Treas (1989). Consequently, the original validity of the 1989 Nakao and Treas Prestige Scores is applicable to the validity of the status variable for this study. However, since the usage of Nakao and Treas Prestige Scores for this study occurred nearly two decades after the Nakao and Treas study in which the scores were determined, the stability of prestige scores over time is also concern.

Nakao and Treas conducted their study of occupational prestige as part of an effort to update and extend the Socioeconomic Index of Occupations (SEI) originally constructed by Duncan in 1961. Nakao and Treas' study included 503 of the occupations found in the 1980 Census Occupational Classification system. Nakao and Treas computed correlation coefficients between the Prestige Scores they developed, the SEI they created using the Prestige Scores, the Stevens and Cho Prestige Scores, the Stevens and Cho SEI, the Stevens and Hoisington Prestige Scores, and the Stevens and Hoisington SEI. The Stevens and Cho SEI and the Stevens and Hoisington SEI were two earlier efforts to create an updated SEI, while the corresponding Prestige Scores were the survey results upon which the indexes were based. The correlation coefficients computed ranged from .836 to .970 indicating strong correlations between the various indexes and prestige scores (Nakao & Treas, 1992).

Regarding the stability issue, since Treiman (1977), the perception of occupational prestige has been thought to be stable across different social positions, different societal contexts, and different historical periods (Wegener, 1992; Zhou, 2005).

Treiman's study involved secondary analysis of 85 occupational prestige studies, some of a historical nature, from 53 countries (Treiman, 1977). Other researchers who have provided evidence of the stability of occupational prestige, both before and after Treiman include: Nietz (1935), Brown (1955), Hodge, Siegel, and Rossi (1964) Hodge, Treiman, and Rossi (1966), Blau and Duncan (1967), Nakao and Treas (1992), Wegener (1992) and Goyder (2005). However, Goyder, Guppy and Thompson (2003) found that occupational prestige has been converging over time for incumbents of the two sexes.

One final issue to note, the NLSY97 coded occupations using the 1990 and 2002 Census Occupation Codes. This introduced a question regarding how occupations that had emerged since the development of the 1980 Census Occupation Codes, to which the Nakao and Treas Prestige Scores were keyed, should be coded for prestige. Census Memorandum, 90OCCSRD.DA, February 28, 1990, as found in Hirsch and Macpherson (2006), documented the changes between the 1980 and 1990 Census Occupation Codes. Referencing this, if the Census Memorandum showed that the 1990 Occupation Code was sub-divided from a 1980 Occupation Code, the Nakao and Treas Prestige Score that corresponded to the broader 1980 Occupation Code was used. If the 1990 Occupation Code was the result of a merger between two or more 1980 Census Occupation Codes, the higher Prestige Score of the two 1980 Census Occupation Codes was used.

Prestige Scores	Census Code 1980	1990	Type of Change	1990 Title (Except Where Noted)
53	017	016	Split	Postmasters and mail superintendents
51	019	017	New	Managers, food serving and lodging establishments
39	016	018	Split	Managers, properties and real estate
49	018	019	Split	Funeral directors
51	019	021	New	Managers, service organization n.e.c
51	019	022	Split	Managers and administrators n.e.c
63	098	098	Title	Respiratory therapists

45	349	353	Consolidated	(Old)Telegraphers
33	353	353	Split	Communications equipment operators, n.e.c
28	368	368	Title	Weighers, measurers, checkers and samplers
35	369	368	Consolidated	(Old) Samplers
31	436	436	Title	Cooks
28	437	436	Consolidated	(old) Short order cooks
29	463	461	Split	Guides
20	464	462	Split	Ushers
42	465	463	Split	Public transportation attendants
27	466	464	Split	Baggage porters and bellhops
46	467	465	Split	Welfare service aides
36	468	466	New	Family child care providers
36	468	467	New	Early childhood teacher's assistants
36	468	468	Split	Child care workers, n.e.c.
47	633	628	Split	Supervisors, production occupations
37	673	674	Consolidated	(Old) Apparel and fabric patternmakers
34	674	674	Split	Miscellaneous precision apparel and fabric workers
39	734	734	Title	Printing press operators
35	794	795	Consolidated	(old) Hand grinding and polishing occupations
35	795	795	Split	Miscellaneous hand working occupations
30	804	804	Title	Truck drivers
30	805	804	Consolidated	(Old) Truck drivers, light
27	863	864	Split	Supervisors, handlers, equipment cleaners, and laborers
33	864	865	Split	Helpers, mechanics and repairers
30	865	866	Split	Helpers, construction trades
38	866	867	Split	Helpers, surveyor
38	867	868	Split	Helpers, extractive occupations
31	873	874	Split	Production helpers

Notes: New - New category for 1990; Split - 1990 code same as 1980 or 1990 title same as 1980; Consolidated – Category consolidated with another; Title – title change; n.e.c. – not elsewhere classified.

APPENDIX D: Multiple Imputation of Missing Data

The multiple imputation method involved estimating 5 values for each missing item, thereby creating 5 completed datasets, using software developed by King, Honaker, Joseph, and Scheve (2001). Across the completed data sets, the missing values were filled with different imputations, reflecting the uncertainty levels of the method, while the observed values remained the same. During the analysis stage, each of these datasets was analyzed separately. However, at the end of the analysis, the results were averaged, and the within and between error rates combined. The imputation model assumed that data was missing at random, conditional on the imputation model. The imputation model also assumed that the data was jointly multivariate normal. As King, Honaker, Joseph and Scheve (2001) noted, this latter assumption is an approximation found by many researchers to work as well as more complicated alternatives. To improve the fit of the imputation model, square roots were taken for *household income to poverty ratio* during the imputation. These were changed back to their original forms, however, before they were used for analysis.

The implementation of event history analysis methods was sufficient to account for missing data in *industries* and *occupations*. Multiple imputation was used to identify a portion of values for *prestige*, *environment typology* and *complexity*. These response variables were based upon NLSY97 variables coding jobs according to the 1990 Census frame for occupations, the use of which was discontinued in 2001. For these variables, cases missing values according to the 1990 occupation codes, but known to have worked by having plausible start dates and values reported for the occupation 2002 and the industry 2002 codes, had values imputed for *prestige*, *environment typology*, and

complexity through multiple imputation. Cases not having plausible start dates, or missing data in the 2002 occupation and industry codes, were treated as missing. To avoid bias due to the 1990 values not being missing at random (they are missing due to the discontinuation of use after 2001), the data set for the imputation was expanded to include the four older age groups of the NLSY97.

Three means were used to assess the imputations. First, to check that the imputations resulted in plausible values for each variable which had had missing data, a plot of the relative frequencies of the observed data was overlain with a plot of the relative frequency of the imputed values. The imputation was judged successful using this method if the plot of imputed values fell within the boundaries of the plot of the observed values. Secondly, to check the accuracy of the imputations, each of the observed values were sequentially treated as if they had been missing, with several hundred values then being imputed for each as replacements. The imputed values were then graphed against the observed values, with 90% confidence intervals also constructed. The imputations were judged successful when confidence intervals crossed the y = x line and the mean of most imputed values fell on or very near the y = x line. Finally, to verify that the estimated maximum likelihood algorithms were finding global maximums, and not local maximums, the estimated maximum chain was run from multiple, dispersed, starting points. The imputations were judged successful when plots of the largest principal component converged at a single point (Abayomi, Gelman, & Levy, 2008; Honaker, King, & Blackwell, 2007).

APPENDIX E: Results of General Estimating Equations for Question 1 (Age Only)

	Model 1			Model 2			Model 3		
	B	SE	Exp	B	SE	Exp	B	SE	Exp
Age 14	-2.098***	.08	.12	-1.871***	.1278	.154	-1.906***	.1302	.149
Age 14.5	-1.913***	.08	.15	-1.680***	.1286	.186	-1.714***	.1310	.180
Age 15	-1.723***	.08	.18	-1.481***	.1287	.227	-1.515***	.1307	.220
Age 15.5	-1.641***	.08	.19	-1.391***	.1309	.249	-1.422***	.1327	.241
Age 16	-.650***	.07	.52	-.383**	.1240	.682	-.413**	.1256	.662
Age 16.5	-1.141***	.09	.32	-.859***	.1410	.424	-.882***	.1425	.414
Age 17	-1.076***	.11	.34	-.785***	.1517	.456	-.808**	.1535	.446
Age 17.5	-1.291***	.13	.28	-.996***	.1671	.369	-1.020***	.1681	.361
Age 18	-.950***	.14	.39	-.655***	.1719	.520	-.675	.1736	.509
Age 18.5	-1.660***	.20	.19	-1.370***	.2272	.254	-1.391***	.2282	.249
Male				-.076	.0585	.927	-.080	.0586	.923
Female				0	.	1	0	.	1
Black				-.288***	.0810	.750	-.295**	.0810	.745
Hispanic				-.203	.0832	.816	-.220*	.0836	.802
White				0	.	1	0	.	1
Income to Poverty				.000	.0001	1.000	.000	.0001	1.000
West				-.224*	.0975	.799	-.215*	.0973	.806
South				-.226*	.0911	.797	-.222*	.0907	.801
North Central				.094	.1036	1.099	.095	.1034	1.099
Northeast				0	.	1	0	.	1
Urban				.058	.0710	1.059	.053	.0714	1.054
Rural				0	.	1	0	.	1
2 or more moves							.355**	.1151	1.427
1 move							.051	.0789	1.053
0 moves							0	.	1
QIC	7633.964			7601.461					7596.124
QICC	7633.964			7600.832					7595.476

Notes: QIC – Extension of Akaike's Information Criterion for choosing best correlation structure; QICC – Extension of Akaike's Information Criterion for choosing best subset of predictors; * Significant at .05 level; ** significant at .01 level; ***Significant at .001 level.

APPENDIX F: Results of General Estimating Equations for Question 2 (Industries)

	Leisure & Hospitality			Wholesale & Retail Sales			Education & Health Services			Professional & Business Services			Other		
	B	SE	Exp	B	SE	Exp	B	SE	Exp	B	SE	Exp	B	SE	Exp
Age 14	-3.69***	.25	.03	-3.98***	.30	.02	-4.04***	.31	.02	-4.40***	.46	.01	-3.15***	.27	.04
Age 15	-2.23***	.22	.11	-2.87***	.26	.06	-3.60***	.30	.03	-3.73***	.42	.02	-2.57***	.27	.08
Age 16	-1.13***	.22	.32	-1.49***	.23	.23	-3.38***	.30	.03	-3.31***	.41	.04	-1.93***	.26	.15
Age 17	-1.38***	.22	.25	-1.55***	.24	.21	-2.84***	.30	.06	-2.63***	.42	.07	-1.716***	.26	.18
Age 18	-1.29***	.23	.28	-1.26***	.24	.28	-2.66***	.32	.07	-2.64***	.41	.07	-1.25***	.28	.29
Male	.18	.14	1.20	-.09	.16	.91	.61**	.23	1.83	-1.14**	.33	.32	-.44*	.19	.65
Female	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Black	-.26	.17	.77	-.57**	.21	.57	.72**	.27	2.06	-.16	.38	.86	-.77**	.26	.46
Hispanic	-.27	.18	.77	-.20	.21	.82	.27	.30	1.31	.14	.35	1.15	-.28	.23	.75
White	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Income to Poverty	.00	.00	1.00	.00*	.00	1.00	.00	.00	1.00	.00	.00	1.00	.00	.00	1.00
West	-.08	.19	.92	-.43	.22	.65	-.73**	.27	.48	.21	.42	1.23	-.17	.24	.84
South	-.012	.18	.99	-.28	.22	.76	-.62*	.26	.54	.03	.40	1.04	-.19	.23	.83
North Central	.26	.19	1.30	-.13	.23	.88	-.38	.27	.69	-.06	.42	.94	.13	.23	1.14
Northeast	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Urban	.13	.12	1.14	.18	.15	1.20	.16	.18	1.18	.14	.24	1.15	.07	.15	1.07
Rural	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
2 or more moves	.38*	.19	1.46	.49*	.22	1.64	-.55	.28	.58	.18	.36	1.19	.20	.25	1.22
1 move	.04	.11	1.04	.05	.14	1.05	-.01	.18	.99	-.37	.25	.69	-.02	.14	.98
0 moves	0	.25	1	0	.	1	0	.	1	0	.	1	0	.	1

Note: SE = standard error; ***Significant at the 0.001 level; ** Significant at the 0.01 level.; * Significant at the 0.05

APPENDIX G: Results of General Estimating Equations for Question 3 (Occupations)

	Food Preparation & Related			Sales & Related			Office & Administrative Support			Buildings & Grounds			Other		
	B	SE	Exp	B	SE	Exp	B	SE	Exp	B	SE	Exp	B	SE	Exp
Age 14	-3.11***	.23	.05	-4.00***	.25	.01	-4.20***	.29	.02	-2.82***	.26	.06	-1.75***	.17	.17
Age 15	-1.80***	.20	.17	-2.94***	.22	.05	-3.14***	.26	.04	-2.38***	.26	.09	-.89***	.17	.45
Age 16	-.83***	.20	.43	-1.73***	.22	.18	-2.49***	.25	.08	-2.15***	.26	.12	-.38*	.17	.68
Age 17	-.96***	.21	.39	-1.86***	.22	.16	-2.56***	.27	.08	-1.88***	.26	.15	.14	.18	1.14
Age 18	-1.12***	.21	.33	-1.71***	.23	.18	-2.22***	.27	.11	-1.81***	.26	.16	.35	.19	1.43
Male	.06	.14	1.06	.94***	.15	2.55	.00	.18	1.00	-.84***	.20	.43	-.60***	.13	.55
Female	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Black	-.63***	.17	.53	.02*	.17	1.02	-.22	.23	.81	-.13	.24	.88	-.37*	.16	.69
Hispanic	-.74***	.19	.48	.12*	.19	1.13	.06	.22	1.06	.04	.24	1.04	-.33*	.17	.72
White	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Income to Poverty	.00**	.00	1.00	.00*	.00	1.00	.00*	.00	1.00	.00	.00	1.00	.00	.00	1.00
West	.10	.18	1.11	-.42	.18	.66	.18	.25	1.20	-.05	.25	.96	-.29	.16	.75
South	.04	.17	1.04	-.38	.18	.68	.10	.24	1.11	-.15	.24	.86	-.24	.15	.79
North Central	.21	.18	1.24	.09	.19	1.10	.10	.25	1.10	.42	.24	1.51	-.23	.16	.79
Northeast	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Urban	.11	.11	1.12	.20	.12	1.22	.14	.145	1.15	-.10	.14	.91	.04	.08	1.04
Rural	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
2 or more moves	.19	.19	1.21	.40*	.18	1.49	-.09	.23	.91	-.66*	.26	.52	.36*	.13	1.44
1 move	-.03	.11	.97	.17	.11	1.19	.14	.14	1.15	.05	.137	1.05	-.11	.08	.90
0 moves	0	.	.05	0	.	1	0	.	1	0	.	1	0	.	1

Note: SE = standard error; ***Significant at the 0.001 level; ** Significant at the 0.01 level.; * Significant at the 0.05

APPENDIX H: Results of General Estimating Equations for Question 4 (Prestige)

	Below Median			Above Median		
	B	SE	Exp(B)	B	SE	Exp(B)
Age 14	-1.57***	.16	.21	-2.33***	.17	.10
Age 15	-.59***	.15	.55	-1.28***	.16	.28
Age 16	.159	.16	1.16	-.50**	.16	.61
Age 17	.28	.16	1.32	-.14	.17	.87
Age 18	.57**	.17	1.76	-.06	.17	.94
Male	-.49***	.12	.61	.09	.11	1.09
Female	0	.	1	0	.	1
Black	-.13	.14	.88	-.49*	.15	.61
Hispanic	-.35*	.15	.70	-.24	.15	.79
White	0	.	1	0	.	1
Income to Poverty	.00	.00	1.00	.00	.00	1.00
West	-.12	.14	.88	-.06	.14	.94
South	-.30*	.14	.74	-.04	.14	.96
North Central	.11	.14	1.12	-.00	.14	1.00
Northeast	0	.	1	0	.	1
Urban	.01	.08	1.01	.09	.08	1.09
Rural	0	.	1	0	.	1
2 or more moves	.10	.12	1.11	.32*	.14	1.37
1 move	-.04	.08	.96	.04	.08	1.04
0 moves	0	.	1	0	.	1

Note: SE = standard error; ***Significant at the 0.001 level; ** Significant at the 0.01 level.; * Significant at the 0.05

APPENDIX I: Results of General Estimating Equations for Question 5 (Environment)

	Realistic, Enterprising, Conventional			Conventional, Social, Enterprising			Realistic, Enterprising, Social			Enterprising, Conventional, Realistic			Other		
	B	SE	Exp	B	SE	Exp	B	SE	Exp	B	SE	Exp	B	SE	Exp
Age 14	-1.99***	.19	.14	-4.99***	.29	.01	-3.50***	.28	.03	-4.69***	.34	.01	-1.92***	.16	.15
Age 15	-1.35***	.19	.26	-3.59***	.24	.03	-2.79***	.27	.06	-3.70***	.29	.03	-.89***	.16	.41
Age 16	-.79***	.19	.46	-2.55***	.23	.08	-2.07***	.26	.13	-3.46***	.31	.03	-.03	.16	.97
Age 17	-.62**	.19	.54	-2.81***	.24	.06	-1.99***	.26	.14	-3.26***	.30	.04	.24	.17	1.28
Age 18	-.44*	.19	.64	-2.72***	.23	.07	-1.93***	.26	.15	-3.19***	.30	.04	.41*	.17	1.51
Male	-1.12***	.14	.33	1.13**	.15	3.09	-1.54***	.17	.21	.55**	.19	1.73	.15	.12	1.17
Female	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Black	-.50**	.18	.61	.03	.17	1.03	-.51*	.21	.60	-.02	.21	.98	-.31*	.15	.74
Hispanic	-.36*	.18	.70	.25	.18	1.29	-.25	.21	.78	-.33	.28	.72	-.35*	.15	.70
White	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Income to Poverty	.00	.00	1.00	.00	.00	1.00	.000	.00	1.00	.00	.00	1.00	.00	.00	1.00
West	-.03	.18	.97	-.30	.20	.74	.58*	.25	1.79	-.18	.27	.84	-.29	.14	.75
South	-.24	.17	.79	.02	.19	1.02	.56*	.24	1.76	-.16	.24	.85	-.34*	.14	.71
North Central	.09	.18	1.10	-.05	.21	.95	.52*	.26	1.68	.46	.26	1.58	-.09*	.14	.92
Northeast	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
Urban	-.28**	.11	.76	.38**	.13	1.46	.07	.14	1.07	.35*	.17	1.42	.10	.08	1.10
Rural	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1
2 or more moves	.14	.18	1.15	.23	.21	1.25	.42*	.21	1.53	.53*	.26	1.70	.16	.13	1.17
1 move	-.04	.11	.96	.20	.12	1.22	-.13	.14	.88	.23	.17	1.26	-.05	.08	.95
0 moves	0	.	1	0	.	1	0	.	1	0	.	1	0	.	1

Note: SE = standard error; ***Significant at the 0.001 level; ** Significant at the 0.01 level.; * Significant at the 0.05

APPENDIX J: Results of Estimating Equations for Question 6 (Complexity)

	Below Median			Above Median		
	B	SE	Exp(B)	B	SE	Exp(B)
Age 14	-1.40***	.16	.25	-2.99***	.18	.06
Age 15	-.42**	.16	.66	-1.67***	.17	.19
Age 16	.29	.16	1.33	-.56**	.16	.57
Age 17	.44**	.16	1.55	-.40*	.17	.67
Age 18	.67***	.17	1.96	-.33	.17	.72
Male	-.92***	.12	.40	.73***	.12	2.07
Female	0	.	1	0	.	1
Black	-.52***	.14	.59	-.27	.15	.76
Hispanic	-.48**	.15	.62	-.12	.15	.89
White	0	.	1	0	.	1
Income to Poverty	.00	.00	1.00	.00	.00	1.00
West	.08	.14	1.08	-.28	.15	.76
South	-.09	.14	.91	-.11	.14	.89
North Central	.31*	.14	1.37	-.08	.15	.92
Northeast	0	.	1	0	.	1
Urban	-.05	.08	.95	.23*	.09	1.25
Rural	0	.	1	0	.	1
2 or more moves	.16	.12	1.17	.37*	.14	1.44
1 move	-.00	.07	1.00	.05	.09	1.06
0 moves	0	.	1	0	.	1

Note: SE = standard error; ***Significant at the 0.001 level; ** Significant at the 0.01 level.; * Significant at the 0.05